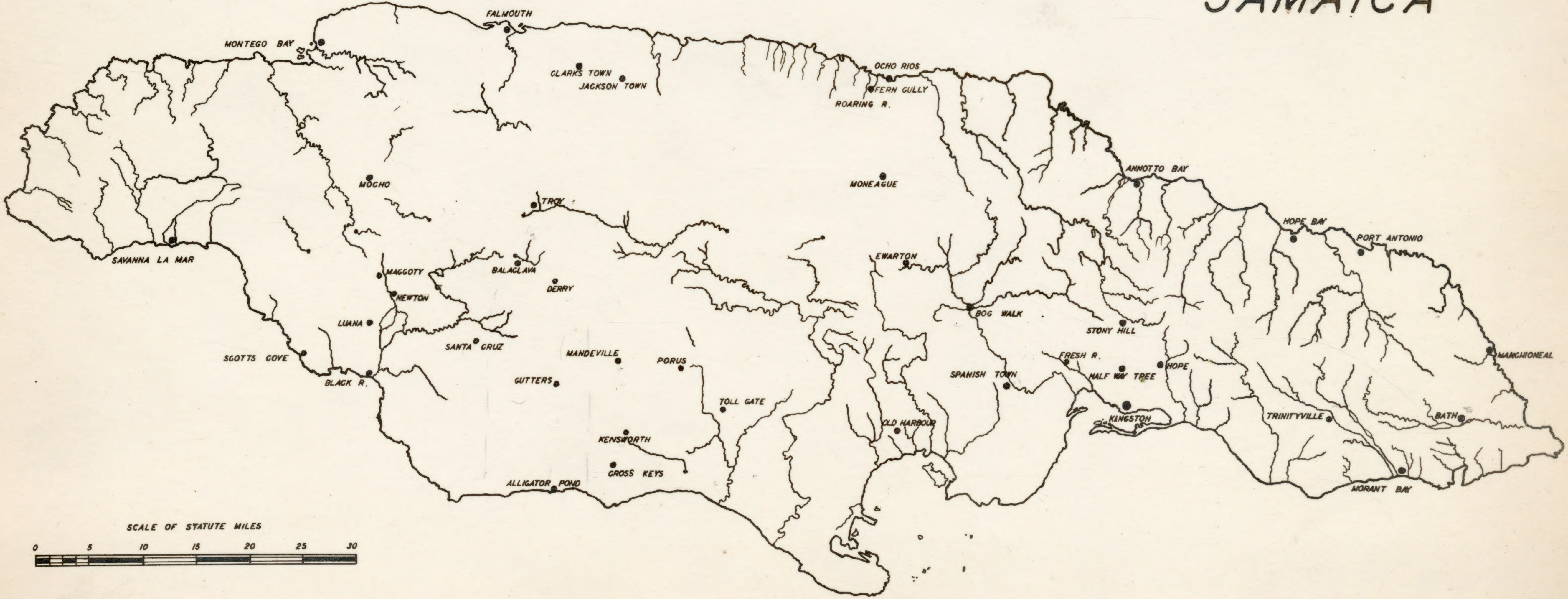
Journal
of
Field Explorations
by
Edward A. Chapin
for the
Smithsonian Institution

Volume 1

SHOUT
SHARE
IT

Cuba and Jamaica, 1937.

JAMAICA


MONTEGO BAY
FALMOUTH
CLARKS TOWN
JACKSON TOWN
OCHO RIOS
FERN GULLY
ROARING R.
ANNOTTO BAY
HOPE BAY
PORT ANTONIO
MANCHIONEAL
MOCHO
TROY
MONEAGUE
SAVANNA LA MAR
MAGGOTY
BALACLAVA
DERRY
EWARTON
NEWTON
BOG WALK
LUANA
SANTA CRUZ
STONY HILL
MANDEVILLE
PORUS
FRESH R.
HOPE
SCOTTS COVE
BLACK R.
GUTTERS
SPANISH TOWN
HALF WAY TREE
TOLL GATE
OLD HARBOUR
KINGSTON
TRINITYVILLE
BATH
KENSWORTH
GROSS KEYS
ALLIGATOR POND
MORANT BAY
SCALE OF STATUTE MILES
0
5
10
15
20
25
30

UNITED STATES NATIONAL MUSEUM
BUREAU OF AMERICAN ETHNOLOGY
ASTROPHYSICAL OBSERVATORY
NATIONAL ZOOLOGICAL PARK

ALL CORRESPONDENCE
SHOULD BE ADDRESSED
TO THE SECRETARY

SMITHSONIAN INSTITUTION
Washington, U.S.A.

NATIONAL GALLERY OF ART
FREER GALLERY OF ART
INTERNATIONAL EXCHANGES

January 12, 1937

Friends and Correspondents
of the Smithsonian Institution:

The bearer of this letter, Dr. E. A. Chapin is Curator of Insects on the staff of the United States National Museum.

Dr. Chapin is visiting Jamaica in pursuance of his official duties and the Smithsonian Institution will greatly appreciate any courtesies or facilities which may be extended to him in this connection.

Very truly yours

C G Abbot
Secretary

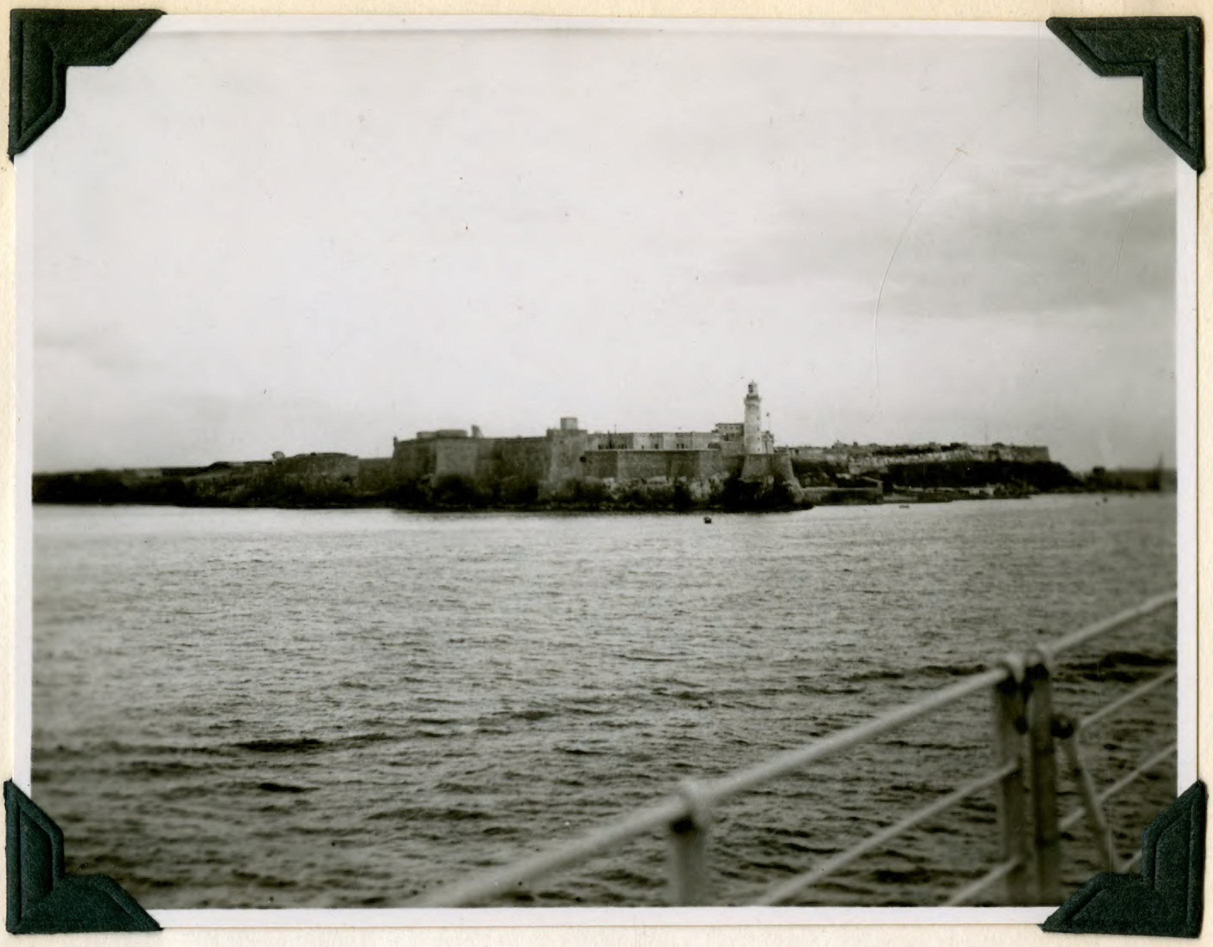
Cuba and Jamaica - 1937.

Jan. 21 - 24. On board the United Fruit boat "Quirigua". Left New York just after noon, in slight fog. Found stateroom and roommate who is John McKeown, Winnetka, Ill., a civil engineer (Univ. of Illinois, 1915). He was an aviator in the last war and lost leg in crash in France. Usual occupational facilities available,- shuffleboard, deck quoits, putting, table tennis, walking, sitting on deck, etc.

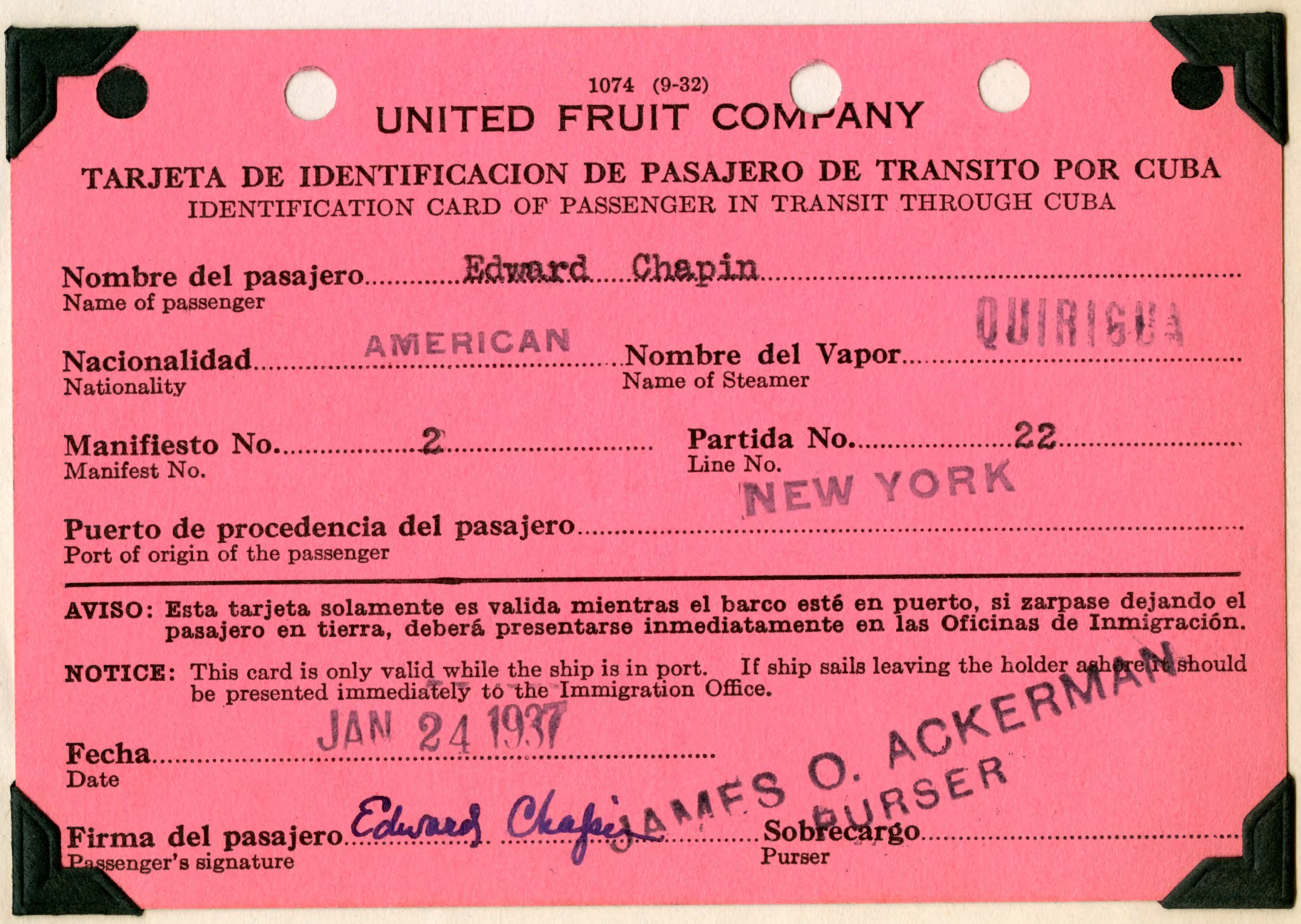
The gulls which have followed us from New York left our boat sometime during the night of the 22nd. On the 23rd much Sargasso weed was visible, occurring in large brown patches, some of which seemed to be as much as a hundred feet across. Flying fishes were also becoming common but were somewhat of a disappointment because of their small size, the larger ones being hardly more than a foot long. They volplane for considerable distances and occasionally appear to run up a wave for a new take-off after making a long initial flight.

Jan. 24. Docked at Habana at exactly 6 PM. Dr. Aguayo, whom I had already met in Washington, came aboard with the immigration authority. As soon as I received a permit to land, we went ashore where we found S. C. Bruner and L. C. Scaramuzza waiting. The four of us went first to "Sloppy Joe's" for Daiquiri cocktails, the a short sightseeing trip about Habana. Aguayo chartered a *ford*, which is Cuban for *taxi*, to take us along Prado and out El Malacon as far as Vedado and then back to the restaurant "El Patio", facing on the Prado, for dinner. El Malecon is a very beautiful boulevard or shore drive. It extends from La Punta, which is the point of land extending toward El Morro, west along the shore to beyond Vedado, in all several miles. From La Punta in toward the center of the city runs El Prado, a beautiful avenue with a magnificent shaded terrace which divides the two lanes of traffic. At the head of Prado stands the ornate Capitolio, the seat of the Cuban government.

Dinner at El Patio was excellent and bountiful; I had fruit cup, soup, fish, steak, salad and coffee. By the end of the salad course there was no room left for the dessert, so it was omitted. It was 9.40 PM when we left the table and we immediately started by ford to call on Alex. Bierig, in Vedado. We found him in and talked about beetles, especially Staphylinidae, until nearly midnight. Bierig is an artist and



El Morro, at entrance of Habana harbor.



1074 (9-32)

UNITED FRUIT COMPANY

TARJETA DE IDENTIFICACION DE PASAJERO DE TRANSITO POR CUBA
IDENTIFICATION CARD OF PASSENGER IN TRANSIT THROUGH CUBA

Nombre del pasajero Edward Chapin
Name of passenger

Nacionalidad AMERICAN **Nombre del Vapor** QUIRIGUA
Nationality Name of Steamer

Manifiesto No. 2 **Partida No.** 22
Manifest No. Line No.

Puerto de procedencia del pasajero NEW YORK
Port of origin of the passenger

AVISO: Esta tarjeta solamente es valida mientras el barco esté en puerto, si zarpase dejando el pasajero en tierra, deberá presentarse inmediatamente en las Oficinas de Inmigración.

NOTICE: This card is only valid while the ship is in port. If ship sails leaving the holder ashore it should be presented immediately to the Immigration Office.

Fecha JAN 24 1937
Date

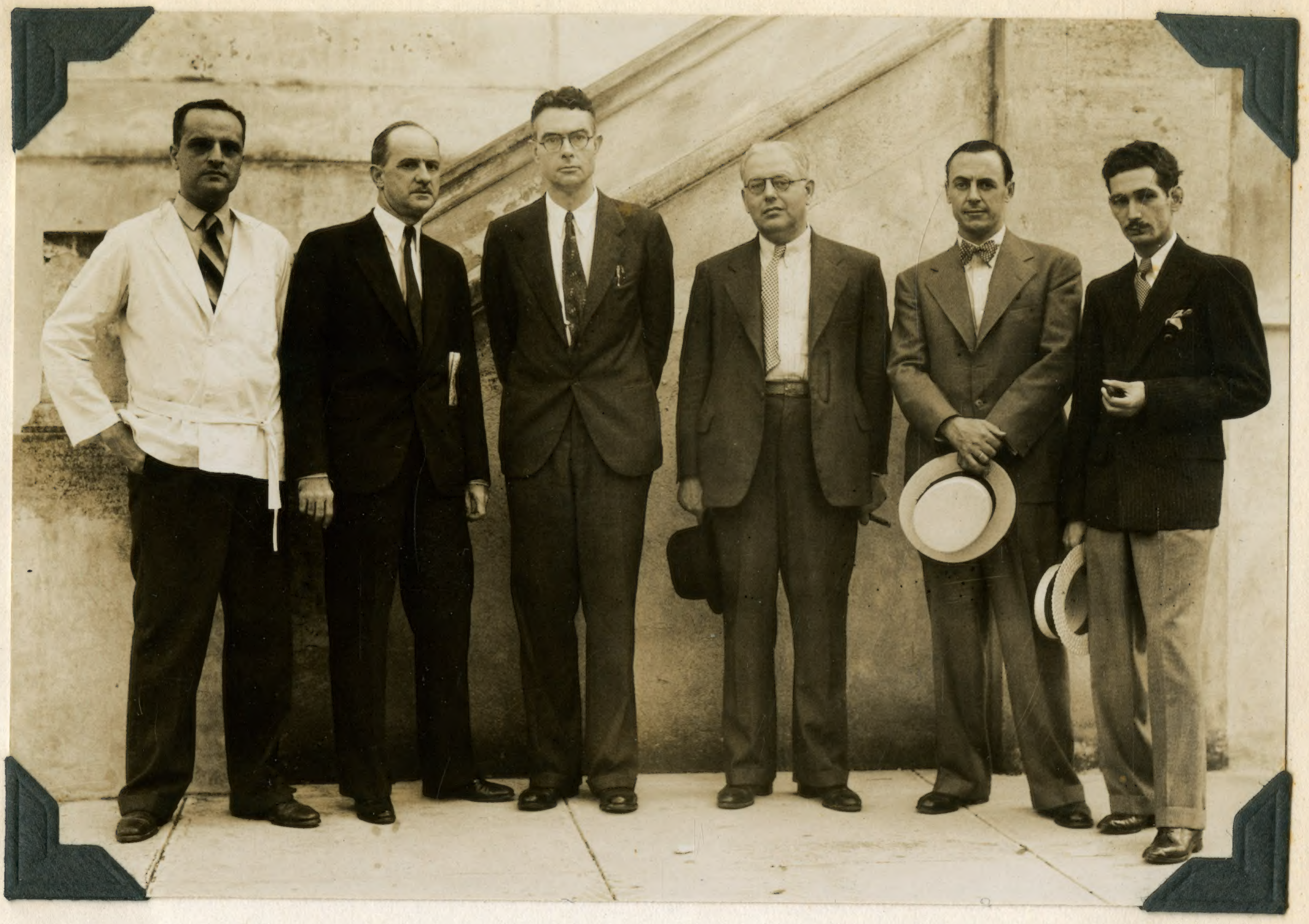
Firma del pasajero Edward Chapin **Sobrecargo** JAMES O. ACKERMAN PURSER
Passenger's signature Purser

Permit to go ashore while boat is in port.

amateur entomologist. The walls of his apartment were crowded with oil paintings, most of which were very pleasing to me. Landscapes and farming scenes were the most common subjects depicted. Bierig's collection was large, was housed in well over a hundred schmitt boxes and was reasonably completely identified. However, I noted that certain easy species in Oxyporus were misidentified and therefore I would not be too ready to accept Bierig's identifications of old species.

Jan. 25. At 8.30 AM, Scaramuzza, Malberti and Navarrete came onto the boat and found me finishing my breakfast. The coffee that I had consumed the previous evening had prevented me from sleeping until nearly four this morning and I was still a bit groggy. Señor Malberti came from the Secretariat of Agriculture and was attached to me because I had expressed a wish to visit the agricultural station at Santiago de las Vegas. Señor Navarret came from the Secretariat of Education and was attached to me because I wished to see the Gundlach collection, now under the care of that office. A car and chauffeur had been placed at my disposal for the duration of my stay in Cuba by the Secretary of Education. We went first to the Instituto de la Habana where the Gundlach collection is housed. The Institute has been closed for four years and the doors leading into the collection room were sealed. Bruner joined us and after some delay the proper official, escorted by a squad of policemen, arrived to break the seals and let us in. Although the building itself has been closed, the patio has been used by the Secretariat of Justice for use in registration of aliens and other purposes. As the boxes which hold the Gundlach collection are individually sealed, the examination of a specimen must be made through the glass top of the box at a distance of about two inches. Two hours was sufficient to go over the Scarabaeidae and I consider the time well spent. Among the specimens of Ligyrus tumulosus I noted a single specimen of the new speciesof Dynastine from Oriente Province. It seems to be the same sex as mine and therefore no special importance to me. Bruner had been checking on some of the Hemiptera during this time and was now ready to go.

After a very good luncheon at a restaurant not far from El Capitolio, we were driven to the University of Havana to call on Dr Aguayo and to see his collections and the layout of his department. We also saw some of the construction work on the new Zoology building. A Representative of the Press took photographs of our



Left to right :

Dr. C. G. Aguayo, Professor of Zoology, Universidad de la Habana.

Mr. S. C. Bruner, Chief of the Section of Entomology, Estación Experimental Agronomica de Cuba at Santiago de las Vegas.

E. A. C.

Mr. G. Navarrete, Inspector Técnico de la Secretaría de Educación, Habana.

Mr. L. C. Scaramuzza, Assistant Entomologist, Estación Experimental Agronomica de Cuba, at Santiago de las Vegas.

Mr. S. Velásquez,

Photo by press photographer at the University, Jan. 25, 1937.

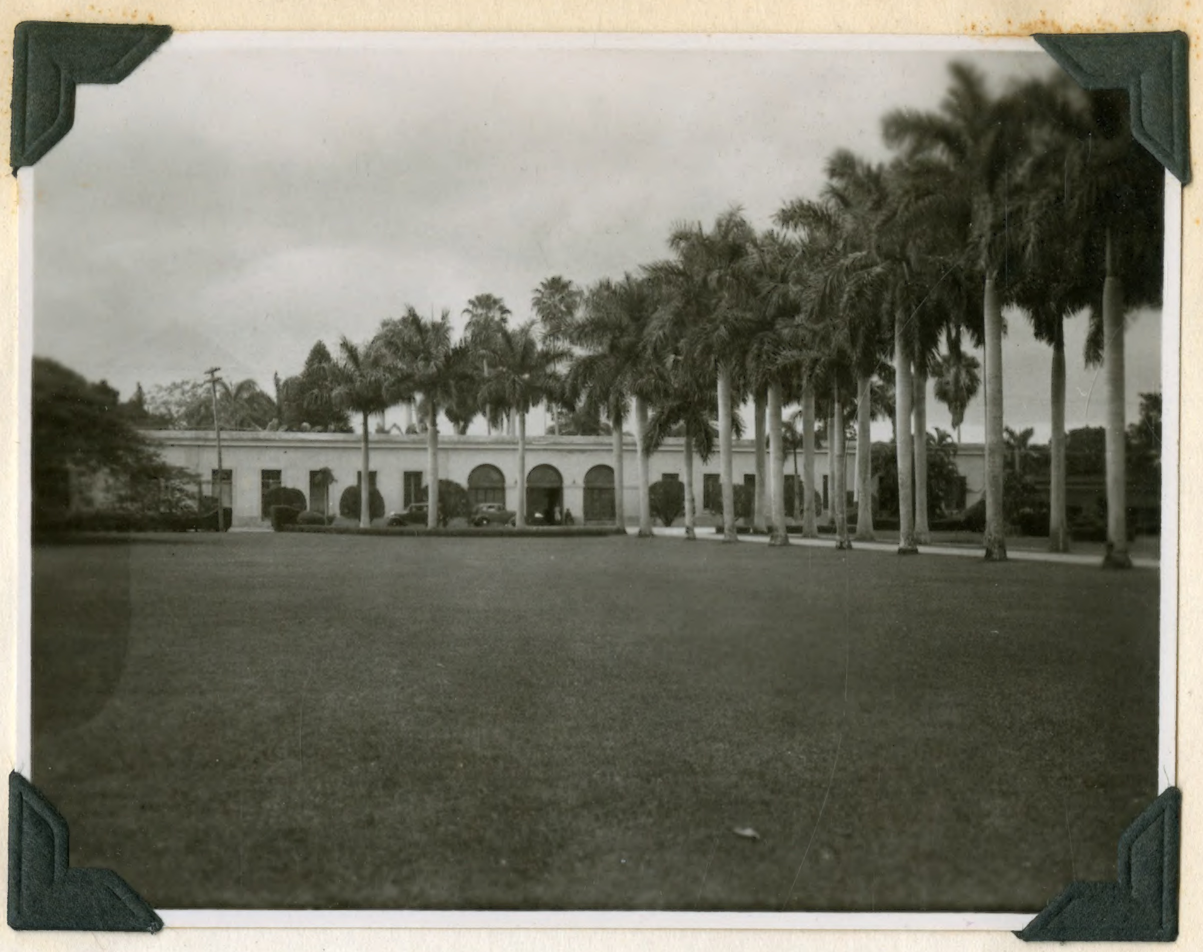
party at the side of the steps of the present Zoology building.

After this short visit to the university, we started out into the country to go to Santiago de las Vegas, where the Estación Experimental Agronomica de Cuba is located. The station building was originally a Spanish military barracks and after the war it was reroofed and refloored and turned over to the Department of Agriculture. It is a huge square building containing or surrounding a large square patio which is used for an arboretum of palm species. Other species of palms are found outside of the building and the avenue of Royal Palms which leads from the main road to the entrance of the station is excellent.

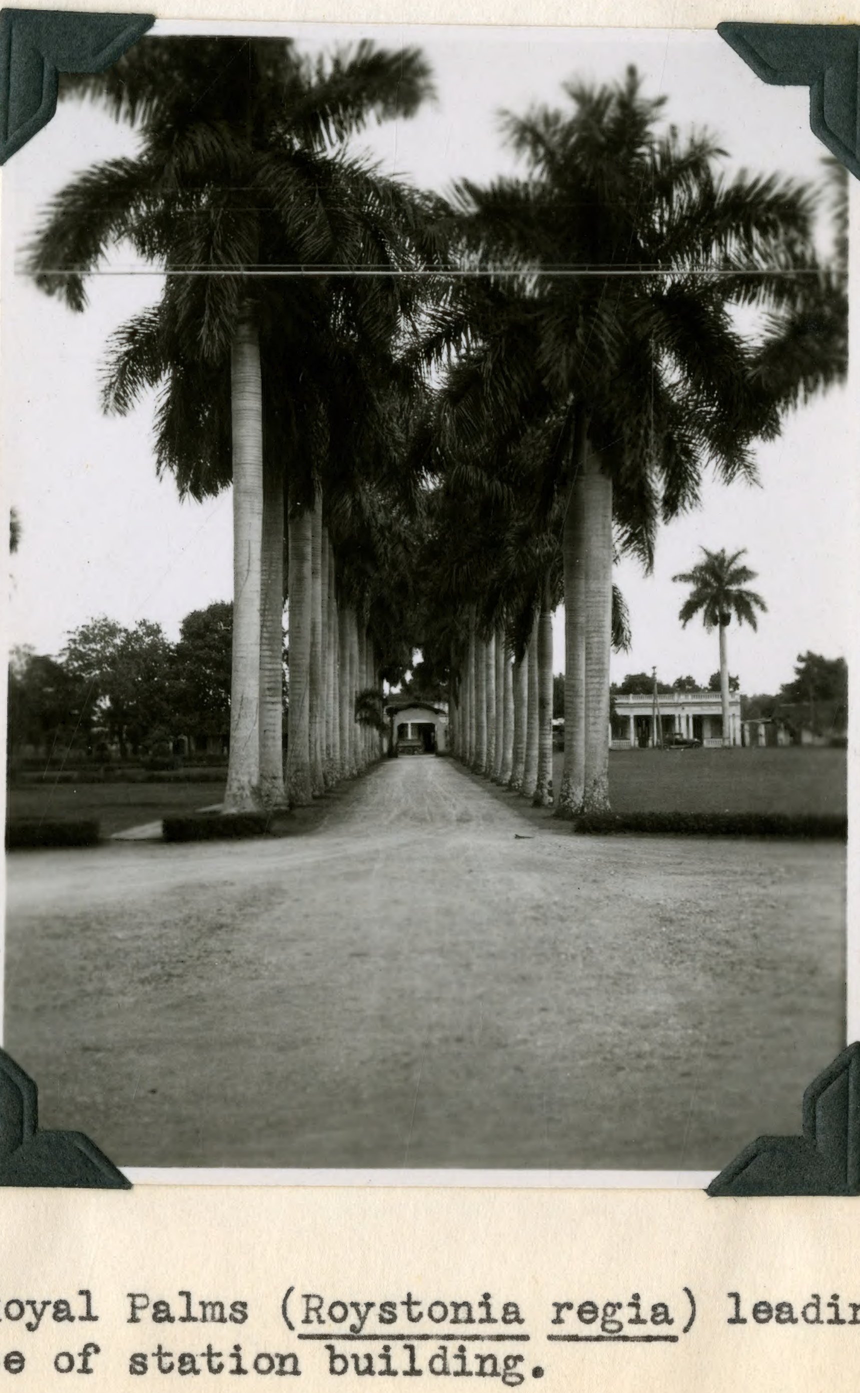
Within the building the station staff have very spacious quarters, I would guess close to 600 sq. ft. per person. The collection is housed in schmitt boxes stored in Brock cases. I went over the material in Scarabaeidae, Tenebrionidae and Coccinellidae. Made a few identifications of species that I was sure of and pinned out a few things to be sent to me in Washington when I get back.

Scaramuzza took me outside so that I could see the rearing cages where the station work on pests is mostly carried on. Sugar, pineapples and bananas seem to be the most important crops though I think coconuts rate high. In one small cage Scara had a pet mongoose that was fed on small lizards (of which there is no scarcity in Cuba). A mongoose looks like and is about the same size as a weasel, to which it is remotely related. The animal was brought into the West Indies to control the rats in the cane fields and coconut walks. There are still rats on the islands where the mongoose has been introduced but the native ground fauna, composed of species less shrewd than rats, has suffered severely. It is only a question of a few years before some of the species of lizards and birds are exterminated.

On the way back we ran into a sudden shower that caused the pavements to become very slippery. Our driver took us through very carefully but we did see an Agriculture Department station wagon crashed in the ditch. All occupants had been taken to the hospital. We drove straight to the Secretariat but could get no news as to the present condition of the victims. From the Secretariat we drove to the dock where I made my good-byes to Bruner and Scaramuzza. We sailed from Havana at 7 PM bound for Kingston, Jamaica.



Estación Experimental Agronomica de Cuba, Santiago de las Vegas.



Avenue of Royal Palms (Roystonia regia) leading to entrance of station building.

Jan. 27. When I went on deck at 7 AM I found that we were off the south coast of Jamaica, somewhere west of Kingston. A small town, probably Black River though possibly Savanna-La-Mar, was in sight. The prospect was anything but pleasant. The hills were burned brown and only the occasional coconut or banana walk showed green. It was hard to believe that there would be any good collecting on the island if this was a fair sample of the conditions. About 1 PM we came about to enter Kingston harbor, the quarantine boat met us and the pilot came on board. I noticed my first pelicans, one on each spile in the channel. We docked at 3 PM and Dick and Ruth were there to greet me. Baggage was passed without question, a representative of the Gleaner asked me for a story, the three of us were photographed and the formalities were over. Dick had a car already hired from Masterton and we loaded the baggage in and started to Mrs. Wooler's at 5 Cargill Ave., Half Way Tree. Dick and Ruth have the large front room (at the left of the sitting porch), just behind them is the bath and I have a smaller room just beyond the bath. Mrs. Wooler is very pleasant. She has been recently widowed and is continuing living in Jamaica at the earnest requests of the children. Eleanor is the oldest, she has taken a place in the Jamaica Automobile Association which certainly supports herself; Hazel, younger than Eleanor and perhaps younger than Boydie, has a small position in Kingston; Boydie, the older boy about 17 yrs. old is head of the house and has a job and finally Mannie, about thirteen, is still in school but will have to stop and find work soon. Mr Nethersole, in the Jamaica Life Assurance Society, has promised help in finding some for him. Mrs. Wooler takes PG s, (paying guests) and will undoubtedly have no trouble in keeping the house full. I am paying three guineas a week

Mrs. Wooler's, 5 Cargill Ave., Half Way Tree, Kingston.

for the room and four meals. Tea certainly should count as a meal for there are almost always sandwiches, cake and tea. We put my baggage away and tea was served.

After tea, I remembered that I had forgotten to leave my stateroom key so we drove down to the dock with it. Then out to Hope Gardens to call on Edwards. Found him busy so we looked around a bit and then went back to the Wooler's. A very good dinner was served at 7.30 PM and afterward we all sat on the front porch and talked until 11.30 PM. To bed under a mosquito bar. It does not pay to screen houses on the island because the air is mostly damp and salt. So each bed is fitted with its own protective screen. To make the screen, one takes a good sized barrel hoop and attaches short ropes at the ends of the right diagonals. Then a sheet of mosquito netting is prepared about 25 ft. long by 7 ft. wide. The 25 ft. length is then attached to the hoop with many deep pleats so that it passes one and a half times around The hoop is closed by a circle of cloth, the ropes are drawn up and tied to serve as a support and the whole contraption is suspended above the center of the bed. When the bed is madeup, the bottom edge of the mosquito net is tucked in under the mattress and there is a three foot overlap along one side through which the occupant can enter. Properly adjusted, it certainly does keep the skeeters out.

The lawn at Hope Gardens, looking toward the administration building. The roadway is at the right and is bordered by palms of various species. Other specimen trees are planted along the outer border.

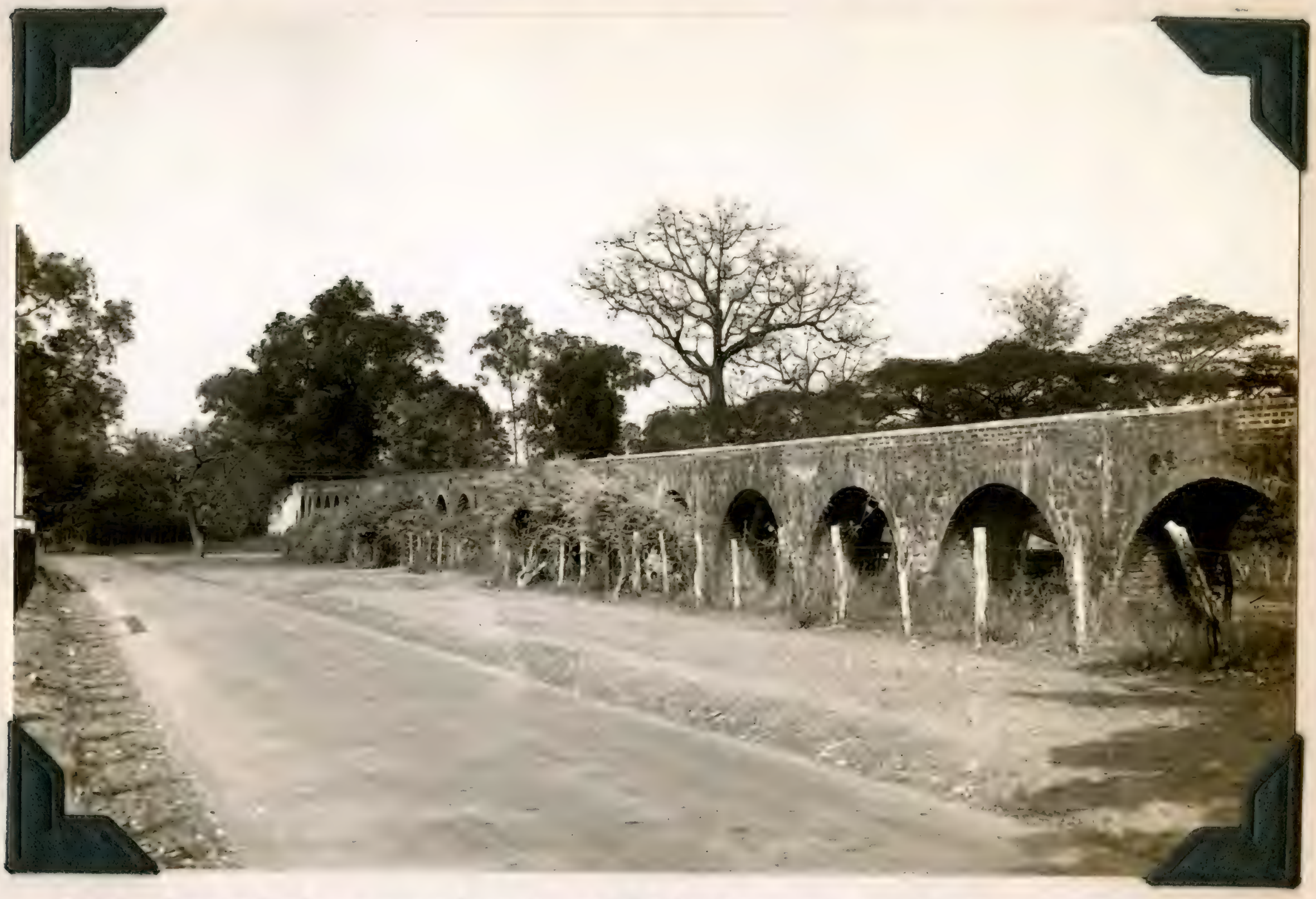
ENTOMOLOGIST

W. H. Edwards

Jan. 28. First went into town to get some money changed into English and to make a few purchases. Ordered a light suit for social purposes, was measured and will have my first fitting tomorrow. Also bought a Wostenholm IXL pocket knife, a helmet and a dozen pony glasses for traps. Next we ran up to Hope Gardens where we collected a few spiders and other things. Sweeping didn't seem very good, everything too dry. So we went over to the Entomologist's Office to meet Mr W. H. Edwards. He has a single large room on the main floor of the building and perhaps some space on the floor above. Very little equipment and one assistant, a Mr Dixon. Edwards was the Government Entomologist on Mauritius before he came to Jamaica, apparently to follow C. C. Gowdey. Edwards proved to be very pleasant and promised as much help as he would be allowed to give. He then took us in to meet the Director of Agriculture. The Director is certainly the original Pain-in-the-Neck. He stood up to receive us (quite properly but he didn't need to be so formal about it) and hoped that we would have a pleasant and profitable sojourn on the island; that we would realize that his men were very busy and should not be disturbed too much We assured him that we did not wish to be bothersome and would not ask for any favors except in case of dire necessity. We left and when we got outside, Edwards apologised for the old fool and said he would help us all that he possibly could. He then invited us to take cocktails at his home the following

Entomology Laboratory

Sunday at 5.30 PM. We drove around the grounds a bit before starting back to town. Dick called my attention to the aquaduct which carries water from Hope River for use in the Gardens. It was first constructed by the Spaniards and has stood the years so well that it was necessary only to top it with a concrete trough to make it quite serviceable. The water stream is about 18 inches wide and 6 to 8 inches deep. It flows very swiftly and must pass a large quantity of water in 24 hours.



Old Spanish aquaduct still in use at Hope Gardens.

On our way back to town we were caught in the worst storm of the season. The rain came down so hard that the road filled above the curbs in spite of the storm sewers. The rain lasted for just a few minutes and we then took the car to Masterton to have the plugs dried. After dinner we went out with flash light and took a good series of cricket, some Black Widows, a few specimens of an ant (Cryptocerus sp.) which were running up and down the trunk of a Lignum Vitae. The shade trees along Cargill Ave. are mostly Lignum Vitaes and are very beautiful. They flower branch by branch, rather than all over at once; the flowers are about an inch across, pale bluish lavender with orange center, and with not much odor. Lignum Vitae honey is well spoken of; we did not have any. One of the trees in the side yard was dying and Boydie cut off one of the larger branches so that I could have an 18 in. section to take home.

Jan. 29. First thing in the morning had a fitting at Nathan's; can have suit tomorrow. Back to the house and while Dick worked over some of the notes, I took a sweeping net and worked over the row of Gunga pea vines. Gunga pea seems to be one of the ever-bearing varieties of legume and the peas resemble Black-eyed rather than Green. Very little to be found except one species of thrips that was very abundant in the flowers. After luncheon Dick and I went to Ferry R. (Fresh R. on map) for our first real collecting. Started to tear bark off a standing dead tree about three feet in diameter and got a surprise. Six or eight roaches, each about three inches long, flew out as soon as the bark was disturbed. On the trunk under the bark was a scorpion perhaps two and a half inches long and a couple of villainous looking but harmless tailless whip scorpions. Also a few beetles. I don't put my bare fingers under loose bark any more. Saw many pseudoscorpions but most of them got away before I could get at them. Found some recent dung in road and dug out a good series of Oniticellus cubiensis (Cast.) and some Aphodiinae. Sifting was not good as the top soil and forest floor are completely dried out. Set some traps baited with molasses. Returned for tea. This is Dick's birthday and Ruth and Mrs. Wooler had a birthday cake and ice cream ready. After tea, the three of us ran up to the bridge across the small stream above Gordontown. Good series of a whirligig beetle, Dineutes sp., and a ptilodactylid, the latter actually in the water. As soon as dusk set in, we put up the net over the car and drove back slowly. Made a good catch of small things, including many Staphylinidae. After supper took flashlight and went after fireflies. Took a series in the field back of the house. There was a fine bunch of a blue tenebrionid, Tarpela mutabilis Waterh. on a fence post. Missed another nice scorpion, this time on a fence post. Home and to bed at 11.45 PM.

Jan. 30. Today we took our first long trip. Packed a good lunch and started to circle the east end of the island. We went by way of Stony Hill and Castleton Gardens to the Wag Water and followed it to the north shore near Anotto Bay. We stopped for our first collecting near here. Swept along the roadside and took a series of Pentatomids as well as the usual line of small stuff. Found a species of Diplopod was travelling on the upper surface of the rails of the R R track. From here we took the coast road toward Port Antonio. Didn't see much that looked promising for collecting until we reached Hope Bay. Back of a old foundation we found a cattle pen which offerred good collecting. Dick found some fleshy fungi that were infested with Staphs and I took a good series of Aphodiinae from and under dung. The old foundation was very nice. It is just one of many to be found on the island and dates back to about 1835. After the freeing of the slaves the economic life of the island was disrupted and many of the planters returned to England. Termites probably took care of the superstructure in a few years but the stone work has stood. Plant life, mostly ferns, has completely covered it so that its color blends perfectly with the background. The larger fern seen in the picture is a maidenhair, not very different from our northern species.

Old cut stone foundation near Hope Bay.

As it was now late in the morning we started along the road looking for a good spot for lunch. We finally selected a place on the beach a few miles west of Port Antonio. The north shore of Jamaica is certainly much better for scenery than the south; the beaches are clean and mostly white, there are many coves and, at least in the east, few mangrove swamps. Shortly after lunch we came into Port Antonio, once the main commercial port of the east end of the island but now of quite minor importance. For many years the United Fruit Co. used Port Antonio and maintained a large tourist hotel on the high ground just back of the town and harbor. The hotel was closed for a few years and when opened it was found that termites had riddled all of the furniture and other woodwork. Later the building was destroyed by fire which was probably a very good thing as the infested timbers might have been transported to other parts of the island, thus spreading the colony. We looked around the town a bit, enjoying especially the various views of the harbor, said to be the most beautiful one on the island. There were one or two boats in at the time but the whole place seemed half asleep. There are a few fairly large and rocky islands just off the coast a little east of Port Antonio that are inhabited by single families. One looked especially nice, the house was set perhaps 500 feet above the water and the island itself might have been an eighth of a mile offshore. We continued along the coast road with occasional stops for collecting until we reached Fair Prospect where we turned in on the road to Friendship Valley. This was one of the best localities that Dick had found in 1935 and at the right time of year should produce a good crop of Chrysomelidae and longicorns. We got some spiders and a few insects, mostly Coccinellidae and leafhoppers. Followed the road and came out on the coast road near Manchioneal. Stopped just south of Manchioneal and took a fine lot of leafhoppers. Getting late so we pushed on home by the shore road by way of Port Morant and White Horses. Reached home at 8.45 PM, too tired to go out after fireflies.

Port Antonio harbor from the west.

Jan. 31. Spent the morning sorting and labelling the catch and in visiting the traps at Ferry River. Found ants in all of the glasses, also one centipede and an earwig. Everything is too dry; such a habitat should have produced full traps. In the afternoon went to Caymanas to meet the Bovells at tea and to arrange to collect on the grounds of the Company. Mrs Bovell and

Marjorie were at home and I felt at ease very quickly. Mrs Bovell announced that she would call me Doc and that we might go up to Derry later in our visit. Mention was also made of Kensworth, another estate belonging to Mr Bovell. He is the manager of Caymanas Estates, Ltd., producers of raw sugar and coconuts. Peculiar in some ways evidently, as he is unwilling to meet strangers. We left shortly to go to the Edwards' cocktail party at the summer house above Hermitage Dam. One drives as far as possible on the road and then climbs the last five hundred feet by a very steep path. When we got up we found that we were on the top of a peak with room for one small house and a very small garden. After cocktails we noticed fireflies and caught a few without falling off the mountain. They were a different species from the one found near the Wooler's. Got home for a late supper and then went out for more fireflies. Found some and located a few of a different species in the gully beyond the next street south of Cargill Ave. Under street lights found many diplopods, that looked common enough to be something good. So to bed.

Feb. 1. Went to town this morning to leave film with Gick for developing and to get suit, netting, tacks, etc. Returned to Cargill Av. and made net for dryopids, sorted yesterday's catch and prepared labels. After lunch took the Mavis Bank road to 2 miles above Gordontown, on the Flora river. Took good series of various dryopids, gyrinids and water-pennies. Went back to station half mile above Gordontown and took many spiders including two species of Tetragnatha. Found some rotton banana trunks which produced weevil larvae, pseudoscorpions and Zoraptera. Used net over car going home.

Liguanea plain, sugar mill in foreground, from Caymanas House.

Feb. 2. After an early breakfast and with a boxed lunch we started for Roaring River Falls. First, a few words about our car. It was a Fiat touring with mountain gear (four speeds forward and one reverse). It had been owned by a physician who turned it in some five years before on a new car. Masterton let us have it for three pounds a week plus two pounds for insurance. The agreement was that we bought all gasoline and oil and Masterton paid for all repairs. As the original tires were on it when we took it, new ones would probably be needed before we were through with our trip. The motor proved to be in reasonable condition and gave us no trouble but the oil consumption was something to marvel at. One quart of oil with each five to seven gallons of gas was the rule and the radiator may have had a leak because it took three or four gallons of water every two or three days. But by and large, it was a good investment and we drove it about three thousand miles in the forty days we had it.

The Fiat, with collecting net

We took the road through Spanish Town and Bog Walk. Near that place we ran into dense fog, rising from the Rio Cobre along which the road runs. We crossed the river there on a new bridge and could see the foundations of an old bridge from the Spanish period. The river passes through a narrow gorge at this point and high up on the wall we could see a marker indicating high water line for some previous flood. From Bog Walk we went on through Linstead to Ewarton where we saw a likely collecting spot. It was a large pasture with considerable cow dung in sight. Took a series of Sulcophanaeus carnifex (L.), some Aphodiinae and Staphs. A decaying grapefruit produced some Nitidulids and Dick noticed an old stump partly covered with a fleshy fungus that gave more Staphs. Our next stop was a couple of miles beyond Monneague where we saw a felled tree. Took some Staphs and Nitidulids under the fairly tight bark. In passing, the country around Ewarton looks just like New England. The farm houses are similar and white, well kept up and the farms are fenced. When we had returned to Kingston I mentioned the fact to Mrs Wooler, who seemed quite interested. She said that most of the New Englanders who migrated to Jamaica at the beginning of the American Revolution because of loyal sympathies settled in this part of the island and apparently they retained their notions of farming and farm buildings. We decided to stop in Fern Gully for collecting but when we got there we found the conditions not good. The soil was quite dry and the leaf cover was scanty and not good for sifting. Found a few Staphylinids but little else. Our next stop was at Roaring River where we did find conditions reasonably good. Below the falls and on each side of the stream there is flat land with dense shrubbery and plenty of moisture. Sweeping was fairly good; took a series of a pretty black and white barine weevil and some chrysomelids. Noticed some small fishes+ in the still water just off the main stream and caught some with the beating net. Had lunch and left at about 2.30 PM. Decided to put the net up. Emptied the net first in Fern Gully, noting one very slender weevil and a nice cioid. Small catch, however, undoubtedly because it was so early in the afternoon. Stopped again at the upper end of Fern Gully to see if the deep shade in the gully had an effect on the flight of insects. The catch was not large but perhaps a few more that the previous one. It contained a few staphs as well as the same types mentioned above. Didn't stop again until we reached Ewarton. This time the catch was considerably larger and with more species. Next stop was just above Spanish Town, after going through the gorge of the Rio Cobre and along the river. Catch large, containing many new species including Aphodiinae, Heteroceridae and Dryopidae. No more stops until we reached Half Way Tree where we took a very heavy catch from the net. Dick estimated the Staphylinidae at about 6,000. This catch was analyzed later and contained representatives of 34 families of beetles and about 140 species. There were also Heteroptera and Homoptera. The Diptera, consisting mainly of Chironomidae, are not good when taken from the net as they are so soft that they break up. The Chironomids amounted to about a teacup full from this one catch. We had time to bathe and dress for dinner and afterward sorted the catch and labelled the bottles.

Feb. 3. Went into town to get the films that were left for developing. On the whole not good; all were slightly fogged as if the pack had been opened in "safe light". As the film is a Panchromatic, there is no safe light. Bought a cutlass at Henderson's for one and nine and paid a boy one shilling to sharpen it. He did a good job and it will be very handy in the brush. Went for the mail and then back to 5 Cargill Ave. to finish sort-

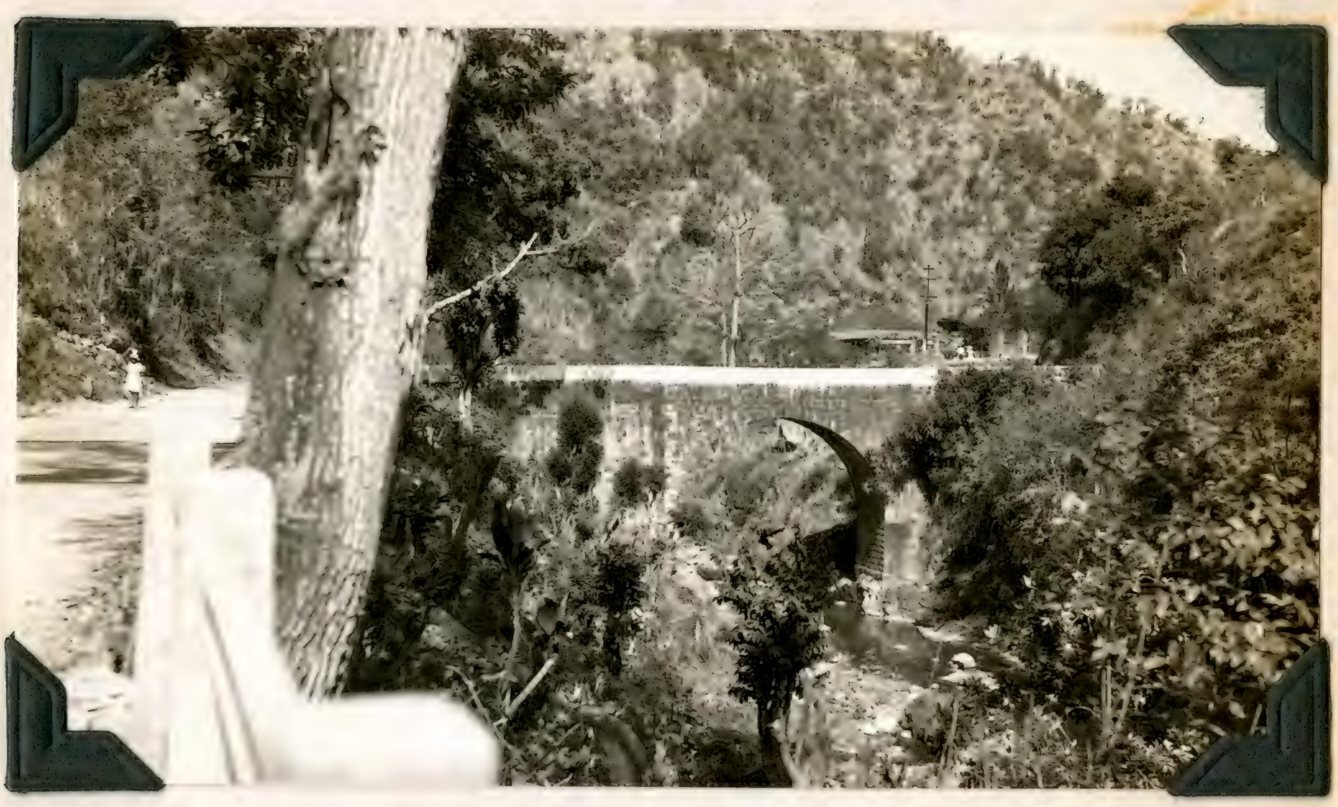
+ Gambusia gracilior Regan

ing yesterday's catch. It is a really good lot with much of interest. After lunch went out the Spanish Town road, stopping at Fresh (Ferry) River to look at the traps. Two of them were practically empty but the third contained a good series of a small and rather strikingly-marked roach. Downstream from the traps we found a log with partly loose bark, under which we took many silvanids, Cossonus sp., Passalus sp. (with larvae) and a scorpion. Managed to catch a few small fishes+ in the small coves along the river bank. These were obviously not the same species as the ones we found at Roaring River. Next we drove the car out onto a sand bar at the ford in the Rio Cobre where we parked. Chased Cicindela sp. back and forth over the sand and managed to net a few, as well as many carabids and Tridactyla sp. We also found a few Staphylinidae under stones. From there we ran the car out the Sligoville road nearly to Sligoville. Saw one Sulcophanaeus in the road which we collected. Turned the car around near a citrus plantation and put the net on. Emptied it at Spanish Town and found that we had a good catch including staphs and Aphodiinae. Home for supper and afterward went to Hope Gardens for fireflies. Had good luck, taking three species (at least). One was fairly large and sluggish, sits on leaves rather close to the ground, flashes with light greenish light, flash continuous for about one second, intervals between flashes long. These were all taken in the low bush below the pasture. Higher up in the pasture there was a second species, very similar to the one from the Pagoda (the name of Edwards' place on the hill where we went for cocktails Jan. 31). This species flies strongly with a steady but short flash. The third and smallest of the species flies high but weakly, is usually beyond reach of the net, flashes with a weak multiple flash which is repeated at close intervals. This species is found over the low wet ground where the large species was taken. Dick found a large luminous elaterid larva. I discovered that it bites viciously. The light organs are apparently in the intersegmental areas, the band behind the head much the strongest, the dorsal bands stronger than the ventrals and with no trace of separate lateral lights. This is almost certainly a Pyrophorus larva. Bed at 11.45 PM.

Feb. 4. Had a late breakfast and started for Newcastle at about 9.30 AM. Above Gordontown at about 3200 ft. we ran into so much rain that we turned back and watched for good collecting places. The Gordontown-Newcastle road is very winding, it is said to have more than 350 sharp turns in the eleven miles. We stopped where a

+ Limia caudofasciata

small stream crossed the road. Found a few water beetles and plenty of fallen trees to work. Under bark found Zoraptera, ants etc. Ate lunch. At the next small stream we found some rotting banana trunks which yielded my first Metamasius adults, more Zoraptera and a couple of Alegoria dilatata Cast. Except for one or two scarabs, this is the only species of insect on Jamaica that I recognize at sight. Stopped again, at the bridge across the Mammee River near junction with the Hope, for dryopids. Found some water pennies and dryopids and managed to catch one small fish. The bridge is of fitted stone and except for the new concrete top is apparently in more or less original condition. These bridges are all very narrow and are strictly one way for traffic. Back to Half Way Tree through Papine and Hope gardens with time to bathe and dress before dinner. Did not go out in the evening but laid plans for the rest of the week.



Old Spanish bridge over Mammee River.

Feb. 5. Went into Kingston to shop and look around. Called on the U. S. Consul and found him a very pleasant young man recently assigned to Kingston. Looked at Wedgwood with view of future purchases. Took tire around to Masterton for repairing. Bought ivory cigarette holder and found a William IV sixpence in my change. Most of the coins in circulation are Victorian, some quite early. Returned to the garage for the tire and for gasoline to burn in the lantern. Then to Edwards' laboratory to look over the collection of local insects. The collection is very poor, many families represented by two or three specimens are really common on the island. Edwards is evidently discouraged by his superior from attempting to build up a good collection. Saw nothing of special interest. What little they have was got together by C. C. Gowdey before he left. We spent the afternoon at 5bCargill Ave., getting the sheet out and ready and filling the lantern. After tea took supper in box and went back to Hope garden to hang sheet. Found a good looking place but the collecting was poor except for leaf hoppers. Went across aqueduct (here it was so low that we could step or jump over it) into the low ground for more fireflies. We stumbled onto a freshly felled tree in the dark and found a few tenebrionids and longicorns (Chlorida sp.) on its trunk. Went back to the sheet and found that the flight was about over so we picked up and went home. Ruth and the Woolers had gone to the movies and we were locked out. After waiting three-quarters of an hour for them to come home, I noticed that I could slip through one of the sidelights (which were unlocked through oversight) and so we were in. Bed about 11.30 PM.

Feb. 6. Mrs Wooler packed a big lunch for us and we started fairly early for Bath in St Thomas. Our road runs along the coast from Kingston, first through the gate of the old fort, now used as a military prison, then by the Pan-American Airways landing basin (all planes stopping at Kingston are amphibians) and finally into open country. Our first stop for collecting was a few miles this side of White Horses, where we saw a large tree recently cut down. It was a fine Tropic Birch about eighteen inches in diameter. The natives called it a "Budge gum", probably a corruption of birch gum. Its technical name is *Bursera gummifera*. Its bark was just beginning to loosen

Old fort near Harbour Head.

and we found a good series of various small beetles in the cracks of the drying bark. Mostly Colydiidae, weevils and tenebrionids but also a few other families were represented. Further along the road but still not as far as White Horses there was a fine tree in full bloom. It was afterward identified from our description and its location as Cordia gerascanthoides by one of the men at the station. Its flowers were like those of a lilac but much larger and pure white. Beat some of the flowers and got a few Bruchids. At White Horses we found an acacia in bloom with an Apion-like weevil in the flowers. As the beach was quite near the road here, we went onto it and turned up some Phaleria under some seaweed. No more stops until we reached Bath. Here we turned off the main road and took the trail to Cuna Cuna Pass through the Blue Mountains. The trail is good enough for a car to within five miles of the pass. Collected in fungus and rotten coconut leafbase, getting a few staphylinids, some diplopods and a frog. Ate our lunch at the end of the good road. There we found a very interesting colonial spider web. It covered about twenty square feet as a single sheet supported by the tops of the grass and herbs. The spiders were spaced some six inches apart over the entire surface and appeared to respect each other's territory. The species was a small one, not over a quarter inch long; the males were brown and the females black. A rotten banana stem near by yielded tenebrionids and nitidulids. We then returned to the main road and ran to a place about one mile east of Bath where the road crosses the Indian Cony River near its junction with the Plantain Garden River. Here there was a very large silk-cotton tree recently cut down. There was a fine pile of chips where about twenty feet of its trunk had been. That piece of trunk may have been made into a boat or canoe. The collecting was the best yet. On the trunk itself we found several specimens of a large cerambycid and one Chalcolepidius. The epiphytic orchids were still alive on the trunk and larger branches. Under chips

Silk-cotton tree (Dick)

there were many myriapods as well as histerids and other beetles. I did a little beating in the small branches and in the shrubbery along the road into a banana plantation and got some good things. Left for home early so that we could put the net up over the car. Emptied the net twice, once at Morant Bay and once at Kingston. Good catches each time. We will return to this tree, probably Monday.

Feb. 7. Today was a day of rest. I arose late, about 10 AM (the rest had all finished breakfast) and spent the rest of the morning sorting and packing the catch of the last two days. Caught up on my journal which was three or four days behind. Wrote letters in the afternoon and went to bed early.

Feb. 8. Again Mrs Wooler had a large lunch put up for us and we started for the silk-cotton tree. We had forgotten to provide water coconuts so inquired along the road and were directed to Clifton Hill. We supposed that we had been directed to the overseer's house but not so. We found ourselves at the great house and evidently mistaken for tramps by the lady of the house, a Mrs. Pengelly. She watched us but didn't intend to talk with us until it came out that we were the two gentlemen from the States who were staying with Mrs. Wooler. Then all was well and we were invited into the house and shown all courtesies. Our coconuts soon arrived and we gave the boy a shilling for the nine that he had knocked down from the trees. When we got to the tree we found a party of blacks loading bananas but we all went about our businesses. The trunk gave us some more of the large cerambycids and another Chalcolepidius, in the chips I got a lot more of the myriapod. Found plenty of dryopids in the Indian Cony and on the other shore we located a very large and very decayed tree. It was so soft that one could slash into it twelve to fourteen inches with the cutlass. We picked away at it and got a few specimens of Macraspis tetradactyla L. and two species of Rhyssodidae, the latter near to the center. Myriapods and pseudoscorpions were also present. Nearby there was an old coconut stump from which we took a beautiful green roach, Panchlora sp. In beating a hedgerow, I took a few good things. While I was beating a long-tailed hummingbird came to within three feet of me and seemed very curious about what I was doing. I could almost have netted him. I saw my first tody in the tree over the banana pen. A small but very brilliantly colored bird, something like a sparrow. As it grew dark and we had eaten what was left of our lunch, we put up the sheet and

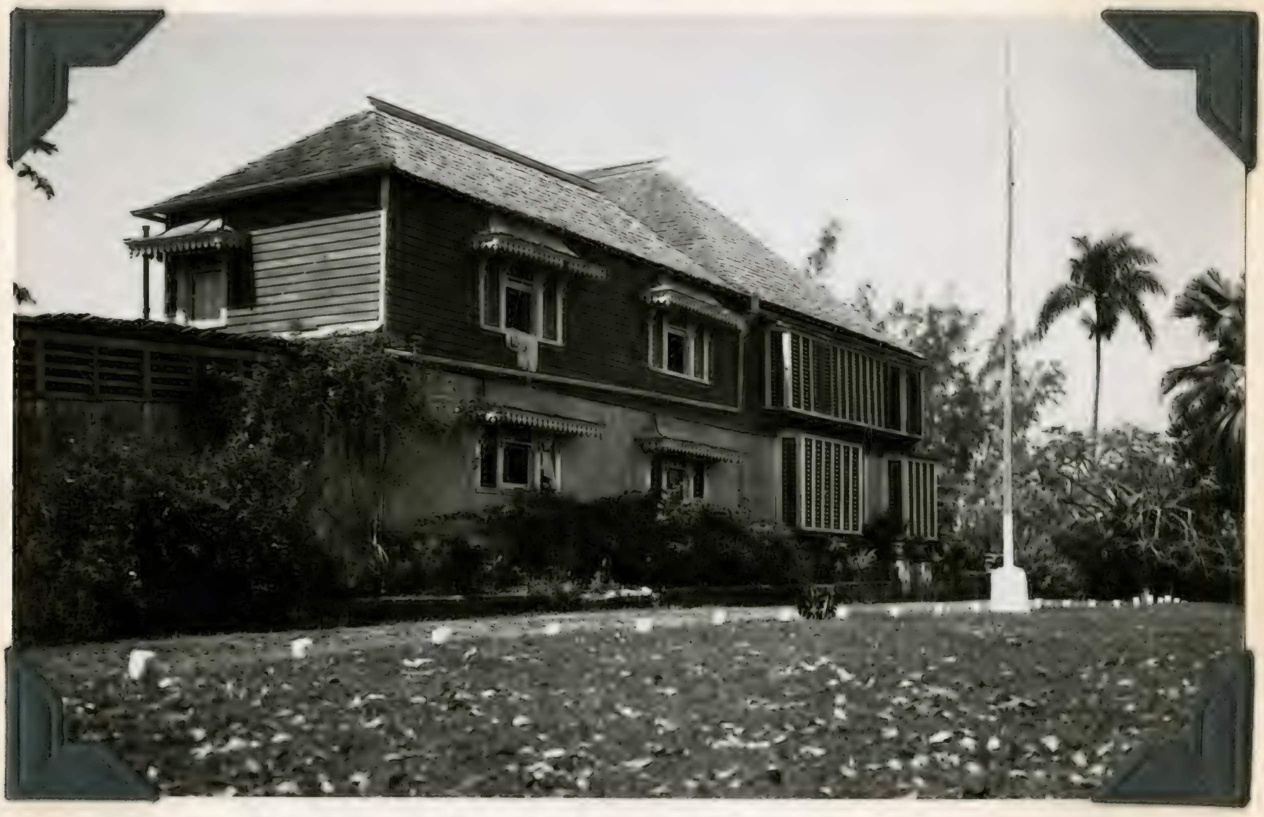
and lantern near the banana crib. Quite a few beetles came, including species that we had not seen before. Got some nice Colydiidae, Scolytidae, Platypodidae and some small whitish weevils. The flight stopped early, about 7.30 PM and we picked up. Dick took a couple of Pyrophorus that were flying. These are called "peenies" on the island. Too late to use the net over the car so we drove without stopping and reached Half Way Tree about 10.30. Ruth was up and showed us a bottle of Cyclocephala tetrica Burm. taken by a Mr Nethersole on his porch. We are invited to collect there tomorrow night. His home is on the Hermitage Dam road, near where we start climbing to go to the Pagoda.

Feb. 9. Slept late and after breakfast went into Kingston for mail (there was none) and to the Customs Office for the tank that Dick shipped from Puerto Rico. Worked over the catch of yesterday and wrote up the journals. Dinner was a little late so that we didn't get to Mr Nethersole's before the flight was past its peak. However, our host and a Mr Schneeball (a New Yorker living next door) had picked up a dozen Phyllophaga jamaicensis. We took a few more and several other good things. Two specimens of a Cyclocephala that looked new (I found out later that Arrow had it in manuscript at the time). Many coccinellids, including Psyllobora nigrovittata Cr., Ps. nana Muls. and Procula douei Muls. Some Ichneumonidae. To bed at about 10.30 PM but no sleep until the early morning because the dogs next door barked steadily.

Feb. 10. Today being a legal holiday (Ash Wednesday) we rested until evening, except for a visit to the King's House where we signed the book. We did it quietly and avoided any invitations to luncheon. In the evening we ran up onto Ram's Horn ridge, across the valley from Mr Nethersole's place and half a mile east of Stony Hill. Burned the lantern for an hour or so but didn't get much as it was distinctly cold. Chased fireflies with flashlights and took a few. Gave it up as hopeless and went down into the gully above Constant Spring where the fireflies were much more abundant. Got a fine series of a large pale species. Back to the house about 10 PM and to bed for a good night's sleep.

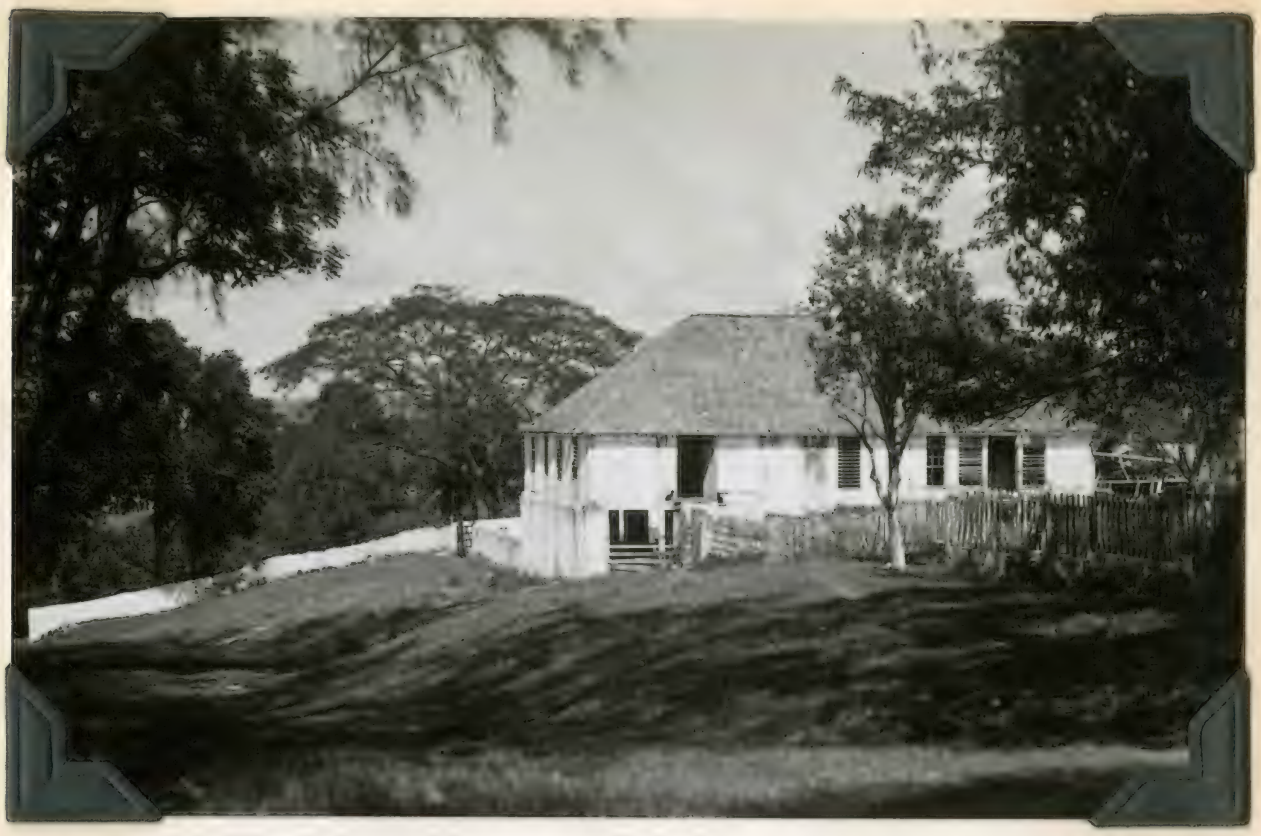
Feb. 11. Did very little today except to pack for Derry and run out to Hope Gardens to see Edwards. Dixon gave me a bottle of Anastrepha collected from mango in the vicinity of the station.

Feb. 12. Left this morning about 9 AM for Derry. The trunk will stay at Mrs Wooler's since Ruth is holding the room while we are away. I have given up my room but hope to get it back when I return. First we go to Mendez Pen to pick up Mrs Bovell. She was at Don's place (bananas now but they hope to make it over into a dairy farm later) and we found it without difficulty. Ruth went with us and will stay with us until we go to Kensworth. Ruth and Dick took the Fiat and I went with Mrs Bovell in her Ford. The road was first back to Old Harbour and then west through May Pen and Four Paths to Toll Gate where we left the main road (to Porus). Had lunch a little way down this road where it crosses Milk River and then up Figuraray Gully to a side road that goes by Kensworth. We stopped there long enough to see that it was habitable and then pushed on to Mandeville. Here we did a bit of shopping for provisions, postage stamps etc. From Mandeville, which is a reasonably large town and very attractive, we took the road through Mile Gully and turned off just before reaching Comfort Hall on a side road that led to Derry House. Derry is an old plantation now owned by Philip Bovell and occupied by the Savariau sisters and the servants. Hermanse Savariau is the older of the two and handles the servants and runs the place. Mary, a few years younger, (both appear to be in the region of seventy) is a born naturalist who should never have been prevented from taking up serious work along the lines of anatomy or taxonomy. Born fifty years too early, she would certainly have done it in this age. She has collected f~~rom~~or B. Preston Clark and others. Both are very pleasant and they will make it easy for us in every way. The present Derry House is not



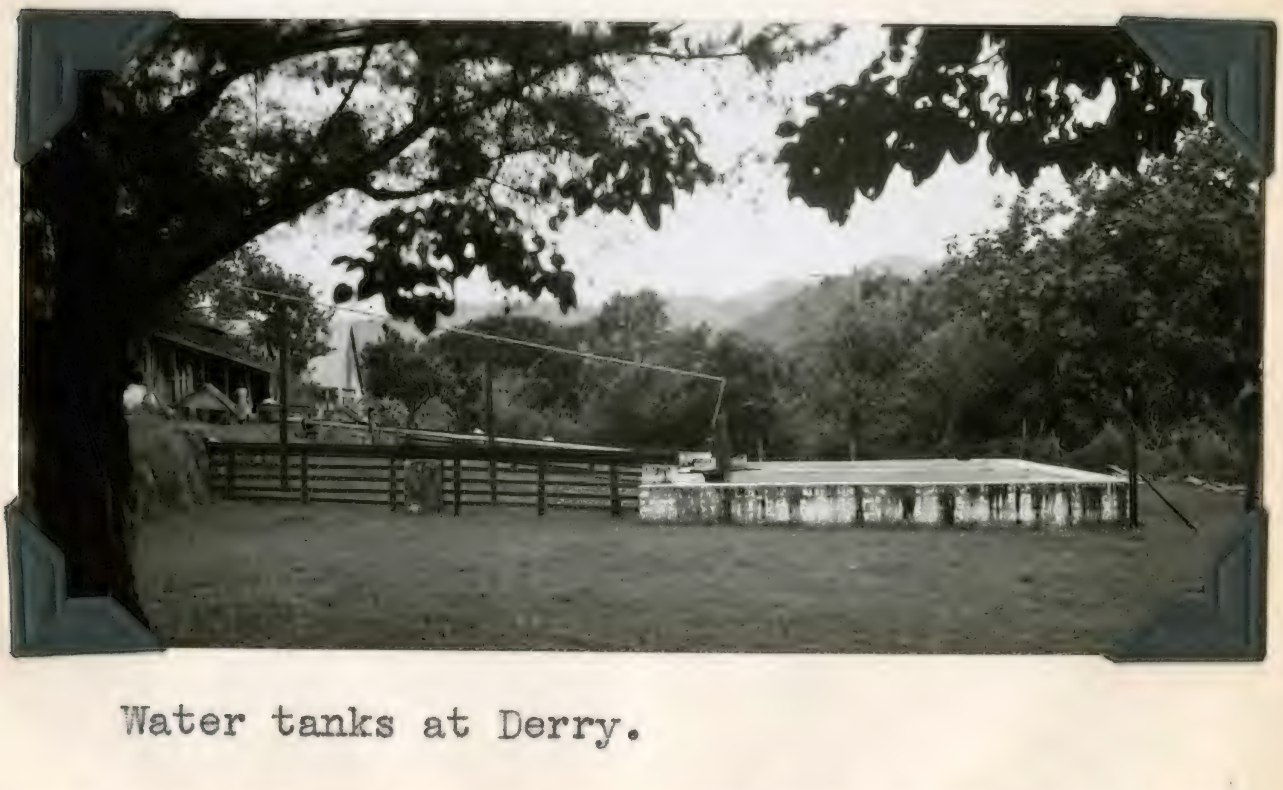
Derry House, from the east.

the original one but was built a little over a hundred years ago to replace the one that was destroyed by fire.



Overseer's house, now stable, at Derry.

The overseer's house stands a little in front of the Great House, that is, nearer to the main road. It is of whitewashed stone and is now used as stable and for general storage purposes. To the west of the Great House are the water tanks, a pair of stone and concrete reservoirs into which the rain water which falls on the roofs of the house is conducted. One of the tanks is for the house and one for the cattle. One does not use unboiled water for drinking purposes here. Back of the Great House and connected to it by a covered passage is the cook house where the servants live. At the side of



Water tanks at Derry.

the cook house there is a large breadfruit tree and

Breadfruit tree at Derry.

all around the estate are various specimen trees of the more unusual species.

As soon as we had our luggage taken to our rooms dinner was called and we sat down at a nearly full table. The large dining room and the adjacent game room are floored with breadnut, a native tree whose wood resembles ebony. The flooring is in random widths showing both dark heart wood and nearly white sap wood and the effect as laid is striking and very beautiful. Each week the floor is polished by one of the servants. A half coconut husk is packed full of orange peel and serves as the scrubbing brush. After a weekly scrubbing for nearly a century the floor has a fine luster and a hard surface that can stand even hobnails without scratching. After dinner we went out and caught a few peenies and then to bed.

Feb. 13. Started out back of the house and stopped first to open a termitarium of Nasutitermes sp. Found the queen cell was in a crotch where we couldn't get at it so couldn't look for guests. Took some ants and carabids under stones in the roadway and some aphodiines under dung in the pasture. The ants were the kind that have long mandibles that click audibly when the ants are disturbed (Odontomachus haematoda (L.) ?). Came back to the house for lunch and after lunch went to the temporary pond north west of the house. Found a colony of Nasutitermes that was swarming and got a good series of winged forms as well as the queen. In a large log lying above the high water line of the pond we found many Passalus in various stages. Sweeping produced little as did collecting on flowers of coffee. The coffee bush in full bloom is a sight with its very dark green leaves and white flowers. In the evening we went out back to hang the sheet and lantern. As we approached a suitable spot, we noticed a large grey bird sitting on a stump. By having Dick keep the beam of the flashlight in his eyes, I was able to walk up to within a yard of him. It was one of the goatsuckers, related to our Whip-poor-will or our Night Hawk. Made no effort to catch him and he soon flew away noiselessly as an owl would have. The evening was too cold and almost nothing came to the sheet.

Feb. 14. Took a lunch and started for Oxford Cave. We stopped at the bridge over the One Eye river, locally known as the Oxford river. Found at least three kinds of Dryopidae in the river, some on rocks but mostly on decaying banana trash that had collected in the backwaters. On a water soaked log in swift current I took a single specimen of Helichus sp. (This proved to be the only specimen of this genus taken during our entire stay.) We ate lunch at the mouth of the cave and in the afternoon drove to Troy where we had good sweeping, especially for leafhoppers. Ruth and Marjorie had joined us at the bridge and they collected dung beetles and dryopids. From Troy we returned by way of Balaclava where we stopped for bread. After dinner we went out for fireflies and took several specimens of a species new to us as well as specimens of species that looked common. If a firefly is not too high, not above 20 feet, it can be enticed down the beam of the flash light, that is, sometimes. A peenie will come in the beam from a much greater distance. It's hard to stand still and not flinch when a peenie flies in because he comes very swiftly. However, he lands so lightly that he is not felt when he strikes the shirt. We also tried the lantern and sheet but without results and we gave up soon and went to bed.

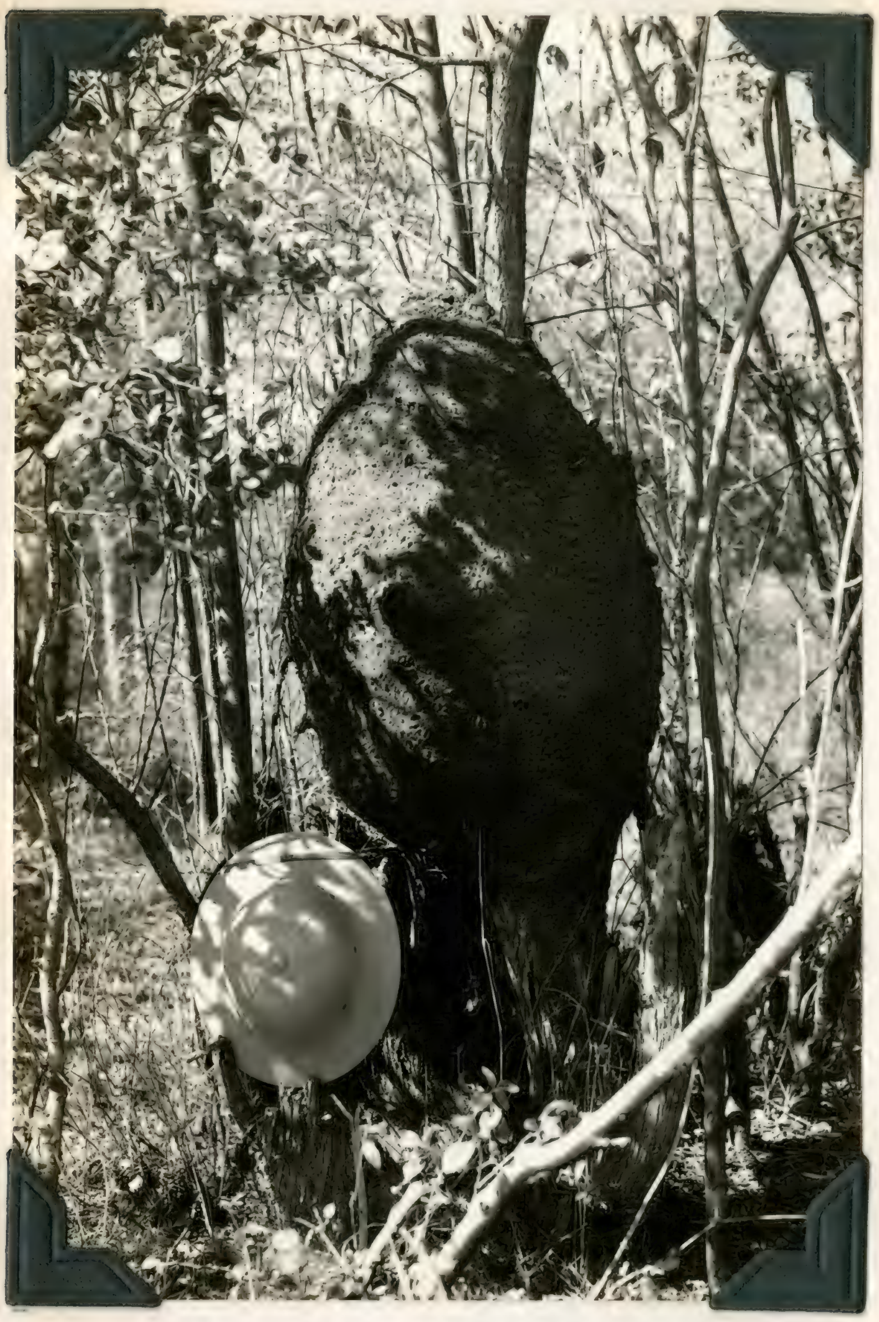
Feb. 15. Sorted the catch of the last few days and included a bottle of peenies and Ligyrus that the Savariau sisters, at least Mary, had saved for us. Collected a little around the place and decided to go over to Maggoty Falls in the afternoon. We went through Balaclava and on the way stopped to collect dryopids in the Black river, we found a few. At the falls we opened a termitarium which had eight queens in the queen cell but no termitophiles. In the lower part of the termitarium we found a few reptile eggs, each about one inch long. Above the queen cell, in the passageways there was a small blind snake, Typhlops jamaicensis, containing three more of the same type of eggs. The snake was small enough to squeeze through the passages in the termitarium and probably fed on the termites. Its scales would protect it from the termites.

Maggoty Falls.

As collecting around the falls was not too good, we moved on to Newton where we stopped at the first clearing for tea and collecting. There was a freshly cut tree and Dick took a long series of nitidulids from the stump and butt. I worked my way into a thorny bush where there was another termitarium but I didn't succeed in getting at the queen cell. Part of the termitarium was occupied by a colony of large red ants which bit ferociously. While I was fighting the red ants I was stung painfully three times by what I took to be a wasp. Later I discovered that the stinger was a small and helpless-looking ant. My hands remained swollen for about three days. We then put the net up over the car and started home, emptying the net first at Balaclava and again at Derry. We had two good catches. After dinner chased fireflies at the side of the house in and around the shrubbery. Bed about 11 PM.

Feb. 16. Today we decided to go to the north shore by way of Catadupa and the Cockpit country. Stopped first at the Jones river for dryopids and took a good series. Then at

Catadupa we took a side road leading to Mocho. Found a few millipeds and some good sweeping. Got a series of coccinellids and spiders; Dick found a few nice staphs. Then we ran through the Cockpits which are now generally planted to bananas to Montego Bay. This is the big resort town on the north shore, full of magnificent hotels which are very expensive. Started east along the shore and stopped at several places to collect under beach drift. Minute trichopterygids were very abundant in the seaweed. Forficulids were also there in numbers but in general the collecting was not good. Phaleria sp. and Aphodiinae should have been there. A mile or so beyond Montego Bay the shore has been captured by the mangrove and there was no more shore line before we reached Falmouth. Here we ate our tea. There are very nice ruins around Falmouth and Hyde Hall. After leaving Falmouth we put the net up over the car. The first part of the run was through cane fields and we emptied the net at the end of the cane. Had a good catch with many staphylinids. On the map this would be Jackson Town. From Jackson Town we took the road running nearly due south through Ulster Spring to Troy and Oxford and then to Derry. Put away the catch and went to bed without any night collecting for fireflies. We leave for Kensworth tomorrow morning.



Carton nest of Nasutitermes sp.

Feb. 17. Left Derry early in the morning for Kensworth. Good thing we started betimes because we had our first real car trouble. Something was wrong with the ignition and while we could do as high as 25 m.p.h. on level ground, we could barely creep up a hill even in extra low gear. We finally stopped and found one sparkplug out because of a broken wire. After this was repaired we made better time but there was still something the matter with the engine. After three hours we had gone 20 miles and we finally reached Kensworth at half past one. By that time Dick had decided that the trouble was a stoppage in the fuel line but we did not have a pump to blow it out. We did clean the filter and that helped a bit. We settled ourselves and had a late tea. We tried out the collecting before supper and found a few things. After supper we hung the gasoline lantern on the porch and used the white wall of the house for a sheet. It was a little chilly and very little came to the light.

Front view of Kensworth.

Feb. 18. Ruth and Dick started for Kingston about 9,30 AM, Ruth to stay at the Wooler's and Dick to take the car to Masterton for repair. He may get back tonight if all goes well. As soon as they were off I started out to the north of the house. Opened a termitarium and found eggs of Typhlops jamaicensis but no snake. Also I missed the queen cell and hence the queen. I should have said egg-shells as the eggs had hatched long since and the shells were dry and curled. This termitarium had been built partly on and partly in a fallen log and the dissection of it was not easy. Found some good sweeping that yielded bruchids, weevils, chrysomelids and others. Spilochalcis or related genus seems to be relatively common for I took eight or ten specimens. There is a small Tigridia-like iridaceous plant fairly common in the pasture. It has yellow goblet like flowers about an inch across and quite pretty. There were ripe seeds to be had so I took a bottle full for Ben Morrison. Came back to the house for dinner which consisted of canned salmon, bread and butter, with grapefruit juice to drink. After dinner I went straight away from the house, to the east and over the terrace wall into the pasture. Much better collecting, took at least fifteen species of beetles as well as many homoptera and heteroptera. The almost total absence of flies and wasps is remarkable. So far I have seen only one wild bee, that one was on a flower on the way to White Horses; I missed it with my net. Flowers are almost as rare, the Cordia and Acacia found Feb. 6, the flower mentioned above and the Yellow "Tigridia" are all that I remember of seeing. I did find the host plant of the bruchid taken in the morning. It is a low shrub, perhaps three feet high, bearing pinnately compound leaves of from ten to twelve leaflets and long slender pods (about 4.5 by .25 inches). By beating every shrub that I could find I got a series of a hundred or so bruchids. I also collected a bottle of the beans for possible identification. Came back to the house for a combined tea-supper of salmon, fresh tomatoes, fried bananas, fried sweet potatoes, boiled cho-cho (which is like summer squash but without seeds), coconut milk and cocoa. A good meal, pretty well cooked. At this point let me introduce the servants.

Looking southwest from Kensworth porch.

They are all very dark brown to black, all appear to be stunted in grouth and all have very bad teeth. The cook and more or less chief-of-staff is Clarice, who is unofficially married to Ferdie. They have one or two children and expect to get married legally some day when it is convenient. Clarice makes very good scrambled eggs and can boil vegetables in water; otherwise the cuisine is very limited. She has a younger sister, Rosa, who cleans house and tries (?) to keep the place in shape. Ferdie does the outside work which includes taking a few cows to pasture each morning and bringing them back each evening. And last, "The Boy", a youngster of about 14 is attached to the menage to run errands etc. He makes one trip a day to Newport for supplies. The weekly wages of the four, respectively, in shillings are 5, 5, 3 and 2, a total of fifteen shillings or about $3.70 a week. In a place like Kingston the wage scale is a little higher but still nothing for the whites to be proud of.

After supper I went over the day's catch and put that away and then, as it was Hazel's birthday, I wrote her a letter. Also one to Alan Stone.

Feb. 19. Went out east of the house again and worked along as far as the stone wall and bamboo thicket. Took more of the bruchids and quite a series of good things. In fact, the best collecting that I have had so far on the island. Came back to the house to get more bottles of alcohol and found the noon meal on the table. Clarice is under the impression that I never come back until I am hungry. Since it was ready, I ate. Then I went along the road, sweeping the vegetation with poor results until I met Dick, returning from Kingston. The car is now in better condition than ever. Ruth stayed behind at the Wooler's. Dick brought mail which was welcome. After unpacking and reading the mail, we swept for more bruchids. In the evening we put up the light on the porch and went out for fireflies whenever we saw a flash. About 9.30 PM a car pulled up at the front door. Marjorie Bovell and Barbara Nurse got out and settled themselves in the two rooms on the other side of the house. They watched us collect for awhile and then went to bed. We had planned to stay up until 3 AM to find out when the fireflies quit flying but got so sleepy that we gave up just before one.

Feb. 20. We started early for Dodd's Beach at Alligator Pond Bay and the girls went to Mandeville to do some shopping. As Paul Oman had asked me to look for a leafhopper living on some beach plant, I swept everything in sight. Finally I located a succulent Convolvulus on the beach away from the salt water which had hoppers. They are probably not what Paul wants but I took them on general principles.

Beach Grape (Coccoloba uvifera Jacq.) was abundant on the sea side and yielded several good things. Best of all was a series of an undescribed species of Psyllobora. It was not common but by beating all of the beach grape in sight we took perhaps six specimens. We will come back here later to get more. There were some nice looking longicorns and one rather large and striking cyrptorhynchine weevil. About noon the girls came with a fine lunch which was thoroughly enjoyed. At a suitable time after eating we went in for a swim in the surf. After the swim the girls went back to Kensworth and we continued to collect until it was time to put the net up over the car. We drove home by way of Cross Keys and took a good catch. Spent the evening talking about this and that.

Beach at Alligator Pond Bay, looking east.

Feb. 21. In the morning Marjorie took me over the estate to point out the dangerous sink holes. One of these is more than 250 feet deep. Don Bovell had himself lowered into it on a 250 ft rope and was unable to see bottom from that point with a strong flashlight. His dog had fallen in while chasing hogs. There are three bad sinks on the place. She also showed me the differences between Convolvulus and Passiflora, genera which I had not differentiated. Took a small series of a blue Halticid on the Passiflora and a large series of a small black Halticid (Epitrix sp.) on the Convolvulus. Back to the house for dinner at about 1 PM. It started to rain and continued the rest of the day. Marjorie and Barbara went back to Caymanas at about 4.30 PM. Barbara is the wife of the factory chemist; they have recently come to the island from Barbados. The rain slowed up a bit at dusk and we took the lantern and sheet over beyond one of the sinks and stayed until 8.00 PM. Took a few fireflies and Sulcophanaeus. Had a late supper and went to bed.

Feb. 22. Washington's Birthday and nobody seems to care ! We packed a lunch and started for BlackRiver town by way of Mandeville and Lacovia. Opened a termitarium near Lacovia and took a large queen but no guests. Just east of Black River we found ourselves at the shore and we beat beach grape getting more of the Psyllobora n.sp. Also took staphylinids, histerids and Aphodius on human excreta. Followed the shore road east until we came to the side road going to Great Pedro Bay. There is a fishing camp there and the odors not any too pleasant. We had decided to eat lunch there but changed our minds. We went back to the main road an had lunch by the roadside in the shade of a large tree. Then on to Alligator Pond Bay for more Psyllobora n.sp. and a swim. There are no bathing facilities at Kensworth. Left at 6.00 PM and ran to Kensworth with the net up. Took a good series of Staphylinidae and Aphodiinae. "The Boy" had caught two galliwasps, lizards reputed to be very poisonous, in the wall in front of the house. Will have to go to Mandeville tomorrow for formaldehyde and a jar to keep them in. Bed about 10.30 PM.

Bamboo near Lacovia.

Feb. 23. Went to Mandeville for shopping. We mailed some letters that we had written, bought some stamps and cigarettes, also gasoline. Finally got some formaldehyde in the drug store and a large glass jar in the hardware and drygoods store. Back to Kensworth for an early dinner. In the afternoon we went out to look for the old works, supposed to be somewhere on the estate but we missed them. We did get more bruchids and also found a sink that hed filled with water so that there was a permanent pool. After tea, went back to Mandeville with two tires that had deflated. We then put up the net and drove back to Kensworth by way of Williamsfield, Porus, Toll Gate and Milk River. Emptied the net at Toll Gate and again at Kensworth. Took over a thousand staphylinids from the net at Toll Gate. Stopped just before we reached Kensworth to chase fireflies; we took at least three species.

Feb. 24. After waiting for breakfast, we took lunch and started for Savanna-La-Mar. We first stopped at Mandeville to pick up the spare wheel left last night.

Silk-cotton tree, showing buttress base.

Then we really started by Spur Tree Hill, Lacovia, Santa Cruz and Black River. Blew another tire near Middle Quarters, just before coming into Black River. So we had to stop at Black River to have that one fixed. Off again, following the shore road toward Savanna-La-Mar. About five miles out we came to a small and rather muddy pond. By laying a board that we found on the mud "beach" we were able to crawl out and collect from the weeds and from the surface of the mud. Dick took some Stenus and other staphs and I got good series of Coleomegilla cubensis Csy. and a blue halticid, perhaps Disonycha. The owner of the pond mistook us for poachers and sent his servant in to expel us. It wasn't difficult to pacify the owner, however. We ate lunch there and then pushed on, stopping next at Seal Cove. Insects were not abundant but the rocks in the shallow water were covered with a small roundish snail with very beautifully marked shell. No two seemed to be alike.

Main street of Black River.

Looking back at Black River from the road.

After collecting a bottle full of the snails, we drove as far as Bluefields, from which point we could see Savanna-La-Mar across Bluefields Bay. Went down onto the beach and beat beach-grape but didn't find the new Psyllobora. Turned back and took the road around Black

River, through Speculation and Luana. Near Luana we saw a good looking pasture and stopped. Dick worked dung for staphylinids and Aphodiinae while I beat the shrubbery from miscellaneous insects and spiders. Took a good lot of the latter. Ate what we had for tea and

Small pond, five miles west of Black River.

At Middle Quarters put up the net. We drove to a point half way up Spur Tree Hill where we stopped to let the engine cool. The catch was a large one, in fact one of the largest that we took on the whole trip. There were more than two thousand staphs and there was a series of eight specimens of what was obviously a new species of Phyllophaga. From Spur Tree we took the road to Knockpatrick, then to Newport and Kensworth.

Feb. 25. Spent the morning putting away the catch of the last two days. Also investigated one of the sinks. The investigation was not conclusive because when a rock is dropped in, you can't hear it strike bottom and so can't tell how deep it really is. It's plenty deep, anyhow. In the shrubbery around the sink we got a beautiful case of chiggers, enough to keep us itching for the next few nights. In the afternoon we went back to Alligator Pond Bay, by way of Mandeville, Spur Tree, Gutters and the road down the valley. Took one more Psyllobora, a few shells and chitons and had a swim. On the way back we put up the net and drove back to Gutters and then back and forth on the Spur Tree - Santa Cruz road until quite dark. However, we took no more of the new Phyllophaga. Finally home through Alligator Pond and Cross Keys. Missed our way at Cross Keys and took the long way around through Newport.

Feb. 26. Breakfast at 8 AM, after which we packed the car for the trip to Kingston. We paid the servants for a week and a half, so they cost us an even guinea. I also gave the Boy three pence for the lizards that he dug out of the wall. Instead of going back over the same road that we first came over (with Mrs. Bovell), we went through Newport, Mandeville, Porus and Toll Gate. Between Porus and Toll Gate we stopped by the Milk River to look for dryopids. Didn't find any but did get badly stung by ants while tearing a rotten banana trunk to pieces. Next stop was at a small pond by the roadside, one mile east of May Pen (23 mi. west of Spanish Town. There was good sweeping around the shore and in the water we got many water beetles and bugs. The pond was just full of water fern (Marsilea quadrifolia L.). This pond was out in the full sun in a pasture. Two miles further down the road we found another pond, this one in the woods. Took a series of a Dineutes which was different from the one we found near Gordontown. Also caught a few small fish.+ Dick found some dung that yielded a large number of staphs, aphodiines, sphaeridiines and histerids. No more stops for collecting and we reached Half Way Tree in time to bathe and dress for dinner. I can't live at the Wooler's now as my room has been taken so I will eat and sleep across the street at the Lindo's. One compensation is hot water for baths. After dinner we went to see the movie "The Ghost Goes West.", very light and funny.

The Lindo's, 6 Cargill Ave., Half Way Tree.

+ Gambusia oligosticta Regan.

Feb. 27. In the morning we took the car to the garage for minor repairs and a check up. Went around to Nathan's and ordered another suit. As the bolt of grey cloth was exhausted, I had to take light brown. When I told Mrs. Wooler, she looked distressed at first but said that as long as I didn't wear brown on the island it would be all right. Only people of color wear brown or any shade thereof on Jamaica. Also went for the mail and to Gick's for films that had been left for processing. They came out much better than the first lot that he handled. Spent tuppence to go home by tram. After lunch we took the tram back to town and recovered the car. Drove out to Hope Garden and found a freshly cut tree but there were no beetles. It was too late to see Edwards so we went back to the house and to bed early.

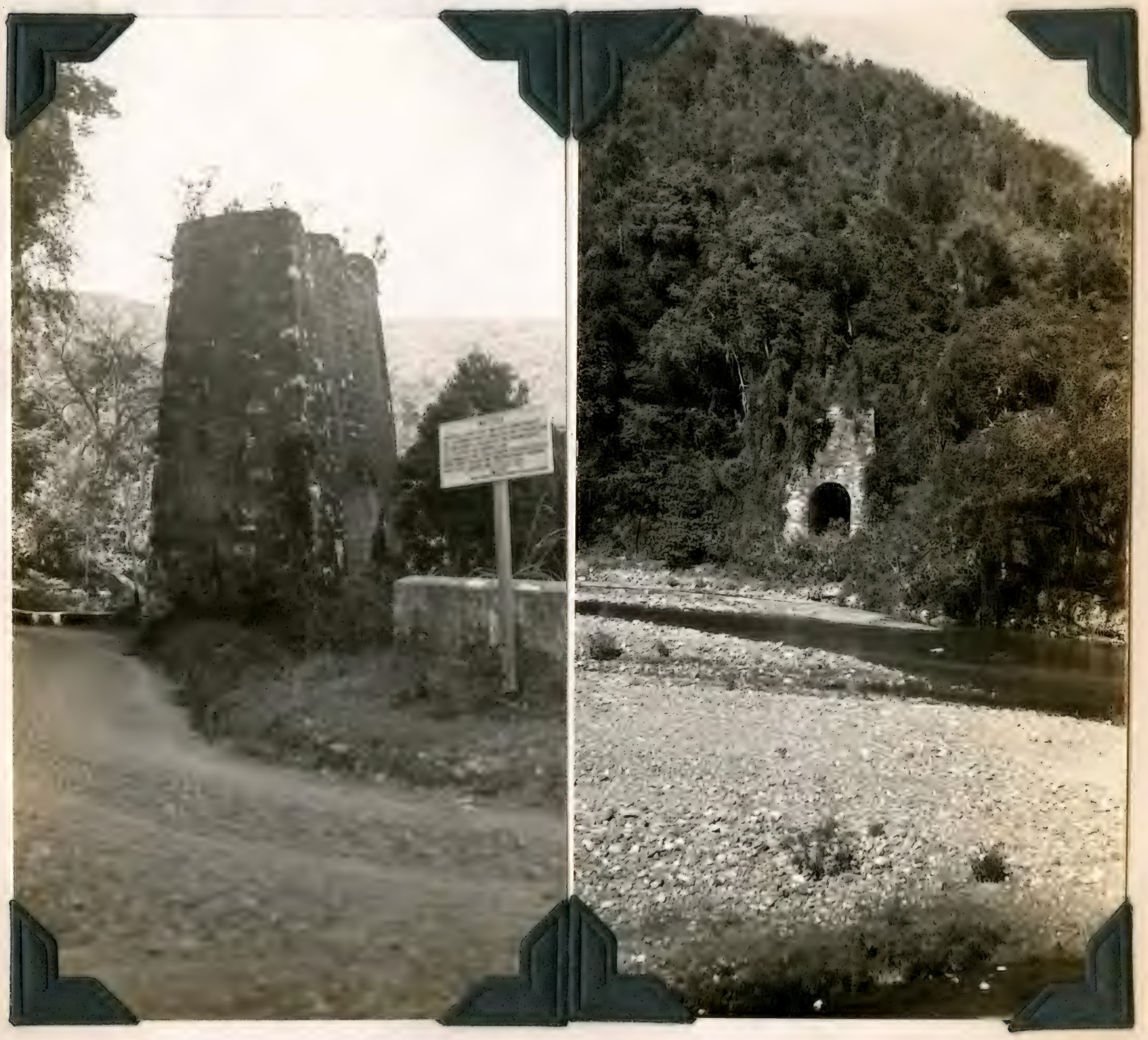
Feb. 28. Took lunch and started for Bath (St. Thomas). Stopped on the road to help a man who had tire trouble. At Leith Hall, near Morant Bay, we stopped for water coconuts. The accountant refused pay for them, saying that the rats got half a million each year and our few could go in with the rat's allowance. Even with the rat depredations, Leith Hall markets a million a year. The accountant has been paralyzed for thirty years, following an accident in the Panama earthquake of 1907 while he was working on the canal. We collected a bit in the vicinity and then pushed on to the silk-cotton tree. Got more of the usual run of

Plantain Garden River at Bath (E.A.C.)

of species and some lizards. Decided to go home by the Cedar Valley road which proved to be one of the most beautiful drives that we have seen. In going toward Kingston, the left side of the road is a steep cliff, over which "bridal veil" waterfalls tumble at frequent intervals. To the right is the valley of the Plantain Garden river. We had the net up over the car and took a good catch. As this was Sunday, the native population was out in its best finery and it was amusing to note that the store keeper at Trinityville must have purchased a bolt of a most arresting shade of purple. We saw about a dozen damzels, each dressed entirely in this remarkable color. Going was slow as the groups of loiterers were always encountered in the middle of the road just around each turn. We arrived at Half Way Tree for late dinners at 8.30 PM.

Mar. 1. Went to Caymanas Estates to say our Good-byes to Mrs. Bovell. Marjorie took us over the factory and we followed the manufacture of sugar from the fresh cut cane to the bagging of the semirefined product. The cane comes in from the field in lengths from three to six feet and is unloaded into a trough whose bottom is a moving belt. The cane first passes through a battery of chopping knives and is reduced to coarse hash. This hash is passed through three sets of very heavy rollers and the juice is completely extracted, leaving the refuse or bagasse dry and ready to burn. Except for the wood necessary to start the boilers at the beginning of the season, the power plant of the factory operates entirely on bagasse. The juice is filtered, mixed with lime and goes to the kettles where it is boiled down. As cane sugar, or sucrose, tends to break down into dextrose and levulose, much of the yield of the cane would be lost if this tendency could not be overcome. Lime prevents the inversion of the dextrose to levulose and therefore is added to the juice. It spoils the molasses because it robs the molasses of part of its sweetness. After the juice is thickened by boiling, it is led into vacuum pans where it continues to boil until the sugar crystals form. At just the right instant the contents of the vacuum pans is sluiced into the centrifuges where the molasses is driven away from the sugar and from which the sugar is taken in a slightly moist state for bagging. If the vacuum pan is ~~not~~ emptied too soon, the yield of sugar is low and if too late, the sugar "freezes" in the pan and has to be chiseled out and considerable expense.

From the factory we drove over to one of the large banana walks where the cutters were at work. Each tree bears a single stem or bunch of bananas and is cut down when the bananas are ready for harvesting. The cutter uses just seven strokes of a cutlass for each tree and receives for his labor the sum of one shilling for each hundred trees cut. He is also penalized for bad bunches, if any. The carriers bring the bunches to previously determined spots along the road where they are washed by the women and loaded into trucks. Two bunches at a time is considered a good load for a man but I have seen three taken. Carriers get three shillings a hundred bunches. The work is hard as it means tramping through mud six or eight inches deep for fifty yards or so with about 150 lbs balanced on the head. We went back to the house for lunch and had a most pleasant visit with Mrs Bovell and Marjorie. Left about 3 PM and drove to Kingston where I left a film pack for development and had a fitting at Nathan's. I was invited to the Wooler's for tea and in the evening we went to the movies. The picture was a comedy "One Rainy Afternoon". Light but amusing.



Pylons of an old Spanish bridge at Easington.

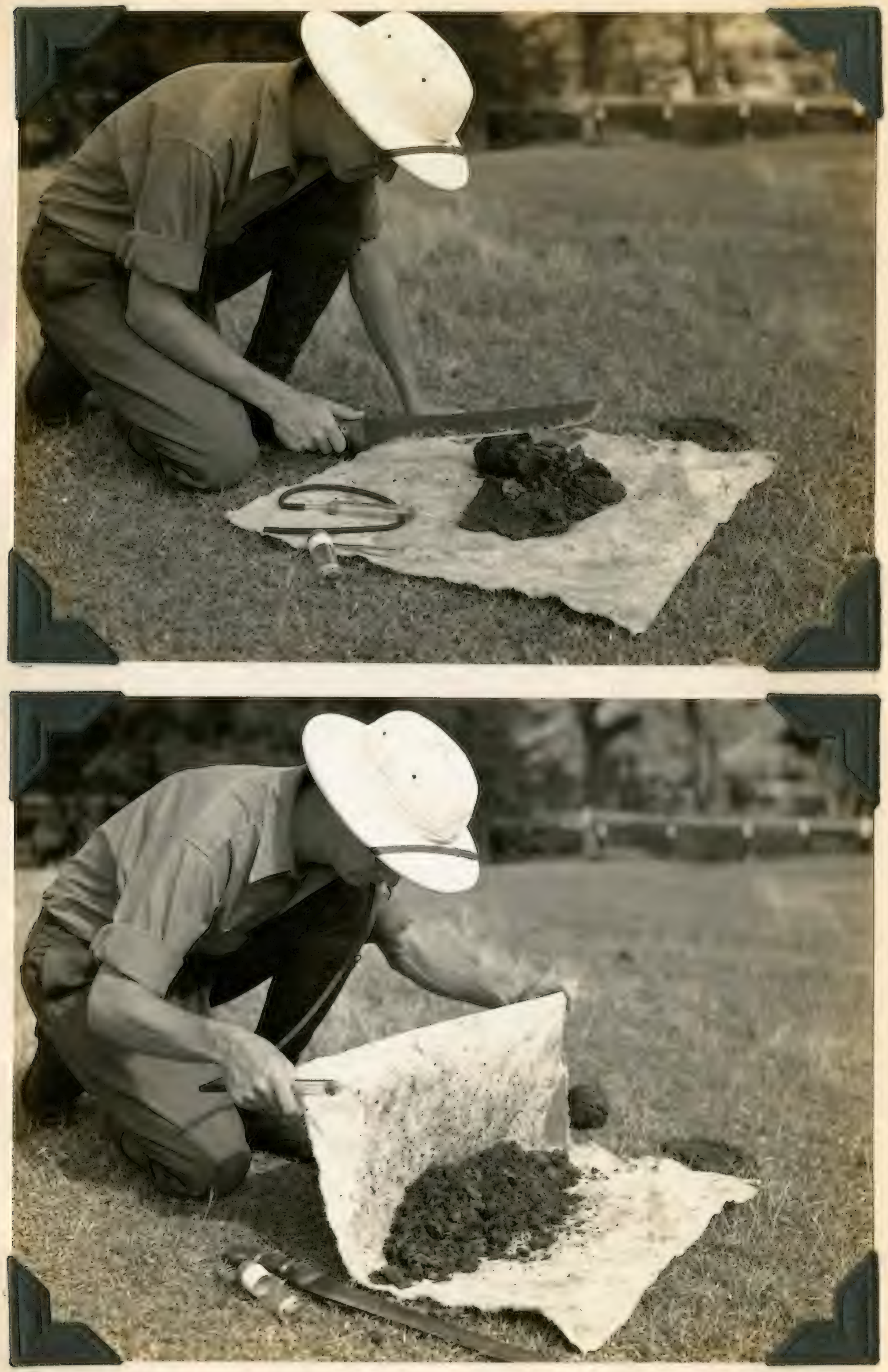
Mar. 2. First went down town to do some errands. Dick is still pursueing the tank supposed to come on the Howe line boat. Nothing heard of it as yet. Then he went to Pan American Airways to try to collect on his plane ticket, Jamaica to Washington. They were not ready to settle and we are a bit nervous. The reservation on the boat must be taken up soon and of course Dick can't afford to pay for four passages home at the same time. I went to the bank (Bank of Nova Scotia) to get cash to pay my bills at Mrs Wooler's and the Lindo's as well as to do a little necessary shopping. Went to Henderson's for hardware. Bought two more cutlasses, at one and nine each, two knives at five and six each and a heavy outdoors knife for Elsie Brown at nine shillings. After lunch we started for Bath by way of Easington and Trinityville. The Yallahs river was very low and the fords were all open. It is hard to believe that if they had a hard rain in the Blue Mountains, the Yallahs would become a raging torrent in a few minutes. Just upstream of the present bridge at Easington are the remains of an old suspension bridge dating from the Spanish occupation. The two pylons are still standing and the notches in their tops for the three cables are plainly visible. The bridge floor was at the level of the gateways cut through the pylons. As we approached Bath we noticed a stream cutting across the road that looked like good collecting. We stopped and took some fine water beetles, including many dytiscids. Almost as good a haul as we made from the small pond in the pasture near May Pen. We ate tea and turned the car around as it was getting late. With the net up we ran back a few miles. Here we turned off of the Cedar Valley (Trinityville) road and went down to Morant Bay, following the Morant River, and then along the coast road to Kingston. Thirteen miles out of town we came across three girls in a broken down car. We took a message to an officer at the Up Park Camp barracks.

The valley of the Yallahs.

Mar. 3. Spent the morning putting away the catch of the last few days. Also wrote up some of the notes that had been neglected. In the afternoon we went back to Pan American Airways and still they are not ready to make the refund on Dick's tickets. We finally drove out to the airport and Dick talked with some of the officials there. He was given assurances that the matter would be adjusted in time for him to take up his reservation on the United Fruit boat. Then we ran out onto the Palisadoes for a short distance. This is the point of land which forms the outer boundary of Kingston harbor and at the end of which is the town of Port Royal. The original Port Royal, destroyed by the earthquake of 1692, stood on a site now under water. On the way back to town we dropped into the United Fruit to make sure that our boat reservations were all right. In the evening we saw a very poor movie "Murder on the Bridal Path".

Mar. 4. Spent the day getting some photographs that we felt we needed for our records. Ran out the Spanish Town road nearly to Ferry river where we found a termitarium in a good place for photographing. (See page 28). Nearby we found a dead dog and from under it took a series of Creophilus and Opatrinus, both genera new to our Jamaica collecting. Then after lunch we went back to Hope Gardens for photos and to see Mr. Edwards. He gave me a set of maps of the Kingston District which are very detailed. There should be four in the set but one was either out of print or had not been prepared. We also arranged to get a gallon of alcohol from him. Took photographs of Dick collecting in dung (see next page) and of some of the buildings. Then we went back down town and paid for the car, again got no satisfaction from Pan American, bought icecream for tea and did some other errands. After dinner or rather tea, we packed the trunk and paid a duty call on some friends of some one in the Pan American Union. The name was Bravo and we were very welcome. We stayed only a short time and then went back to early bed.

Mar. 5. Spent the day packing and doing errands. Dick arranged to have the tank (still missing) delivered from the Horn Line to the Jamaica Auto Association and to have Marjorie notified of its arrival, bought a few gifts, mostly Wedgwood and ivory. We also collected the refund from Pan American Airways and got the gallon of alcohol from Edwards. At six we went to Edwards' home for cocktails and met several people. One of the guests was A. W. Jobbins Pomeroy, once with the U S D A and later with the British government in Africa. He is now retired and lives in Jamaica. He is somewhat of a braggart but has done one creditable paper on Carabidae. I was invited for dinner to the Wooler's, since it was the last night. After dinner



Dick collecting dung beetles.

finished packing the suitcases, including one new one that was necessary to hold the new accessions.

Mar. 6. Made our final goodbyes before nine and started for the boat. We left the baggage on the pier and Dick took the car to Masterton. A chauffeur then drove him back to the pier. Marjorie had come down to see us off and we all went aboard. Our boat is the Ulua, a smaller and more chunky ship than the Quirigua. My stateroom is No. 1, the worst on the boat, I think. It is on the main deck opening into the main saloon. Also I found out later that one of the derricks that is used to hoist the cargo out of the hold has to be set up on the roof just over my bunk, so that I got no sleep the last night when we entered New York. The boat sailed at 10.15 AM and we passed Morant Bay at about 1 PM.

Jamaica, 1941.

UNITED STATES NATIONAL MUSEUM
BUREAU OF AMERICAN ETHNOLOGY
ASTROPHYSICAL OBSERVATORY
NATIONAL ZOOLOGICAL PARK

ALL CORRESPONDENCE
SHOULD BE ADDRESSED
TO THE SECRETARY

SMITHSONIAN INSTITUTION
Washington, U.S.A.

NATIONAL GALLERY OF ART
NATIONAL COLLECTION OF FINE ARTS
FREER GALLERY OF ART
INTERNATIONAL EXCHANGES
DIVISION OF RADIATION AND
ORGANISMS

March 28 1941.

TO WHOM IT MAY CONCERN:

This will serve to introduce Dr. Edward A. Chapin, Curator of Insects, United States National Museum, who is traveling to Jamaica to study the insect life of that Island and to make collections for this Institution.

Any courtesies or assistance that may be accorded him will be deeply appreciated.

CG Abbot
Secretary.

FEDERAL SECURITY AGENCY
U. S. PUBLIC HEALTH SERVICE

IN REPLYING, ADDRESS THE

U.S. Public Health Service Dispensary
Railroad Retirement Board Bldg.,
4th & D Sts., S. W., Washington, D. C.

March 25, 1941.

TO WHOM IT MAY CONCERN:

This is to certify that DR. EDWARD A. CHAPIN, employed as Curator of Insects by the U.S. National Museum, has received three inoculations against typhoid at this Dispensary: 0.5 cc., March 10, 1941; 1.0 cc., March 18, 1941, and 1.0 cc., March 25, 1941.

Respectfully,

J. F. van Ackeren,
Surgeon, USPHS,
Medical Officer in Charge.

VWB:cag

UNITED FRUIT COMPANY
GREAT WHITE FLEET

* * *

T. E. S. "Talamanca"

C. W. WHIDDEN, Master

SAILING FROM NEW YORK,

FRIDAY, APRIL 18, 1941

* * *

PORTS OF CALL:

KINGSTON, JAMAICA, B. W. I.
CRISTOBAL, C. Z.
PORT LIMON, C. R.
PUERTO BARRIOS, GUATEMALA
HAVANA, CUBA

LIST OF PASSENGERS

New York to Kingston, Ja. B. W. I.

MR. E. A. CHAPIN	WASHINGTON, D. C.
MR. & MRS. A. V. COOK	MORRISTOWN, N. J.
MISS L. V. Da COSTA	KINGSTON, JA.
MISS FOWENA FOWLES	RENO, NEVADA
MISS ALBERTHA FRANCIS	ST. ANDREW, JA.
MISS JOYCE GRIERSON	KINGSTON, JA.
MR. T. W. HALL	TORONTO, ONT.
MR. & MRS. M. C. HANDAL & 4 children	KINGSTON, JA.
MISS LUCILE HOSACK	CROSS ROADS, JA.
MR. T. W. NEWCOMB	LONG BRANCH, N. J.
MRS. I. M. OAKLEY	NEW YORK CITY
MR. VINCENT PELLEGRINO	" " "
MRS. M. N. REED	" " "
HON. & MRS. J. A. SANDERS	RENO, NEVADA
MRS. P. P. SEAGRAM	TORONTO, ONT.
MRS. L. E. SOWLEY	BROOKLYN, N. Y.

New York to Cristobal, C. Z.

LIEUT V. L. BIGSBY, U. S. N. R.	MALVERN, PENNA.
MR. SPENCER BURNHAM	CHICAGO, ILL.
MR. ALFRED GILMAN	BRONX, N. Y.
MR. MURRAY HERTZ	BROOKLYN, N. Y.
MR. GUSTAV A. HOLMSTROM	BRONX, N. Y.
MRS. G. E. JACOBS	FORT CLAYTON, C. Z.
LIEUT. J. Y. MILLER, U. S. N.	CHELSEA, MASS.
MR. JOS. RIZZO	BELLROSE, L. I.
MR. LAWRENCE SCACCHETTI	UNION CITY, N. J.
MR. LOUIS SEGAL	BROOKLYN, N. Y.
COMDR. & MRS. H. T. SETTLE, U. S. N.	LOUISVILLE, KY.
MR. H. T. SETTLE, JR.	" "
MISS MARY E. SETTLE	" "
MRS. J. W. STEWART	McLEAN, VA.
MR. M. M. TATZ	BROOKLYN, N. Y.
MR. G. F. WEIS	NEW YORK CITY

New York to Port Limon, C. R.

MR. H. M. LARRABEE	FOREST, IDAHO
MR. AGUSTIN MEMBRENO, P.	SAN JOSE, C. R.
MR. & MRS. F. W. OWENS	ABILENE, KANSAS
MR. & MRS. VICTOR QUEZADA	HILLSDALE, N. J.
MR. & MRS. RICARDO SOLANO, S.	SAN JOSE, C. R.
MRS. AMALIA TREJOS	" " "
MRS. M. L. MORENO de VILLALTA	NEW YORK CITY

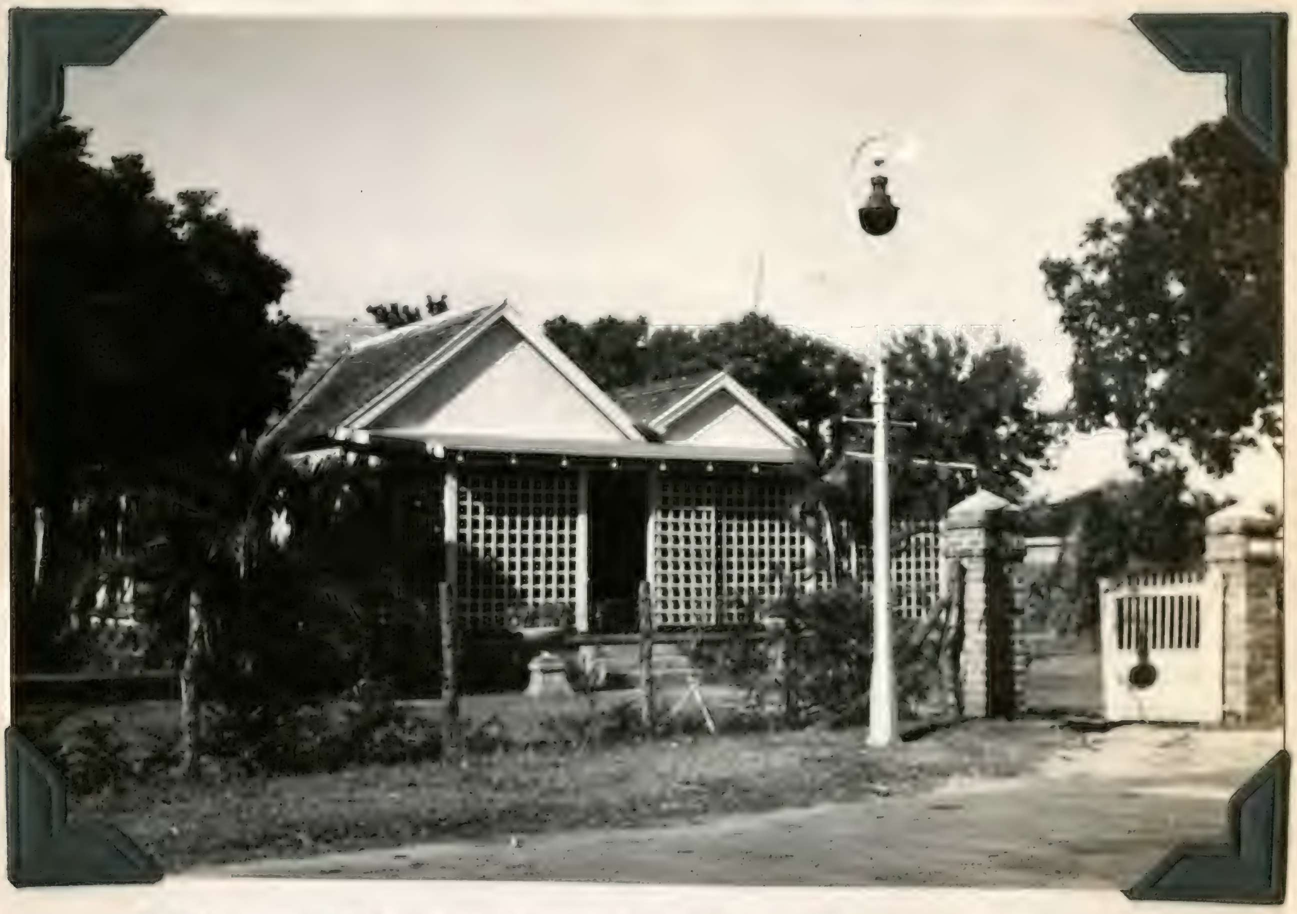
New York to Puerto Barrios, Guatemala

MISS ALICE HANCHETT	DETROIT, MICH.
MISS ESTHER LANG	" "
MISS MARGUERITE YEAMAN	BROOKLYN, N. Y.

Jamaica - 1941.

Apr. 18 - 22. On board the United Fruit boat "Talamanca". Left pier 9, North River at 4.00 PM, in clear weather. As soon as we were clear of the slip, I started to hunt for Julia Stewart who was registered as a passenger. She was sitting in a deck chair and failed to recognize me when I spoke to her. After introducing myself, we got along fine. We arranged to sit at the same table at meals and we got our deck chairs together. We entered th shuffleboard tournament as partners and won, her prize being a bedroom lamp and mine a combination jigger, ice hammer, bottle opener and corkscrew. The cruise passengers were average.

Apr. 22. Docked at Kingston at 10.45 AM. We were in sight of Morant Light at 5.30 and I stayed on deck til breakfast picking out spots that I could recognize. The mountains were completely enveloped in fog at first but by 7.00 the fog was rising and soon all but the tops of the peaks were clear. Boat stopped at Port Royal to let the immigration officers come aboard. We were divided into two groups, British citizens and aliens. All aliens who had British visas were given landing cards, those without were required to remain on the boat while it was in harbour. My Special Passport with courtesy visa from the British Embassy made things very easy and I was told that I would be under no restrictions while on the island. I signed a declaration stating that I had no British money and $575.00 in U. S. currency. When I leave the island I will have to sign a declaration that I am taking away from the island no more money than I brought in. There was no one on the dock that I could recognize so I went straight to Customs, saying goodbye to Julia who goes on the Cristobal to meet Dale who is coming up from Peru. First I put through a telephone call to the Hope station but Edwards was out. Then I called the Jamaica Institute and made contact with C. Bernard Lewis, Curator of Natural History. We arranged that he would call for me at 1.30 PM with his car. Pretty soon my baggage was all together and the inspection was made. My camera, which had been taken from me before we entered British territorial waters, was returned and I was told what I would have to do about films before I could leave the island. All was very pleasant, even the reporter from the Gleaner who asked for a statement as to my attitude on an "all out aid to Britain" policy. I managed to sidestep the issue. Waited about an hour for Lewis, who arrived on time and with my baggage in his car we left for the Institute. He had a meeting at 3.00 and I wandered about Kingston renewing my acquaintance with the shops. The nice place on Harbour Street where the best Wedgwood was to be obtained in 1937 is gone completely and Gick's is no longer in evidence. Lewis tells me that Gick has lost interest in photography and is spending all of his time at the local broadcasting station. About 4 PM I remembered that I had had nothing to eat since morning, so to the Dixie Doodle for a sandwich and some ice-cream. Then back to the Institute in time to meet the Board of Directors, just as the meeting broke up. About 5 PM, Lewis and I went to 2 Piccadilly Road to look at a room that was available. I was satisfied and closed with Mrs. F. L. Dignum for the sum of Two pounds ten a week. Then back to the Institute to get my baggage. After getting settled, I had tea, forgetting that dinner would be served in half an hour. The food was plentiful and well cooked, though the cook has a heavy hand on the pepper and curry powder. Lewis is going to Goat Island (in the American Reservation) tomorrow and has invited me to go along. There are already four persons at 2 Piccadilly Road; Mrs. Florence L. Dignum, widow of the late Assistant Colonial Secretary, her 19 year old daughter, Faith and Dick Doubleday, visiting the island from Vancouver, B. C. The fourth member does not really count. He is a Mr. Radix, english, very ill bred and not much in evidence. I have a large room on the west side, opening onto a side porch and separated from it by jalousies. There are no mosquito bars but am told that the mosquitoes are rarely bothersome. A flit gun is available.



2 Piccadilly Road, Cross Roads P. O.

April 23. Lewis called for me at 6.45 AM and I was ready. Went first to the Institute to pick up two Cayman Island negroes, Norris and Mac. These were two of Lewis' help during his expedition to the Caymans. Then the four of us drove to Old Harbour Bay, through Spanish Town and Old Harbour. While the others were unloading the car, I stepped back into the bush and collected a colony of Crematogaster from a hollow branch. We packed our few supplies about three hundred yards to the shore where the launch was waiting. Before going aboard, we went up shore to look at a young manatee that a fisherman had brought in. It was still alive and looked to be in good health so Lewis arranged to buy it for the Institute's zoo. Leaving shore, we first came abreast of Little Goat Island, already cleared for occupation. The barracks have been built but is not yet occupied because of the plague of sand flies. Great Goat has been surveyed but no great amount of clearing has been done yet. We landed at about the middle of the east side and dumped most of our stuff. So far as Lewis is concerned, the object of the trip was (1) to collect living specimens of the Jamaican Iguana (Cyclura jamaicensis) and (2) to cut sample logs of various species of native hardwoods. This island is the last stand of the Iguana and when the occupation of the island is completed by the U. S. Navy there won't be any lizards left nor many trees. There is a path, though a very rough one,

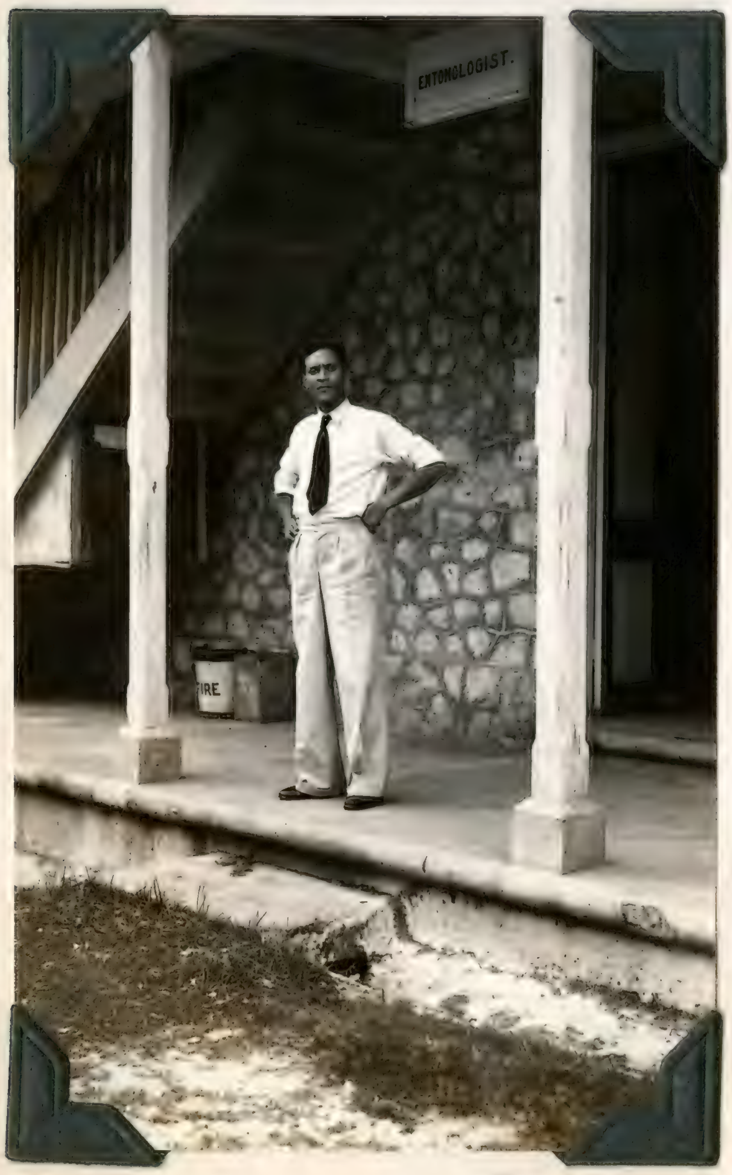
Mrs. D. and Faith.

Dick Doubleday.

right to the top and there the U. S. Coast and Geodetic Survey has constructed a tower about 40 feet high. We climbed the tower and had a grand view of the whole American base, as well as of the hills as far back as the Blue Mountains. After coming down from the tower I was too tired to start out right away so we cut the flower spike out of a "coratoe" or May Pole (Agave sobolifera S.-D.). The flowers form a pyramidal spike four feet high by two feet through, at the end of the leafless ten foot pole. The plant exudes a gelatinous sap that gets all over everything. I nearly caught Norris with my cutlass when it slipped out of my grasp because of the goo. The flowers were swarming with small insects, mostly Anthicidae. Having finished the spike, Lewis suggested that we go back through the bush instead of along the path, in hope of finding an iguana. So we started down over the honeycomb rock, very rough and unpleasant to fall on, cutting our way through the thorn bushes and cacti. Half way down, a large iguana surprised us by jumping from the crotch of a tree, fully five feet above ground. This was the first direct evidence that Lewis had that the iguana could climb, though a statement to that effect had been published in 1851. We failed to get the lizard and continued down to the shore path. I worked my way slowly along the path to where we had landed and immediately stripped and lay down in the water to soak. Our drinking water had given out and I was dry. After 20 minutes in the water I felt much better and was all ready when the launch returned at 2.30 with a fresh supply of water, beer and ginger ale. Collected termites, ants, dragonflies, shells, etc. until 5.15 when we left, going the long way around and having a fine view of both the Goat Islands. Got away in the car at 6.30 and returned to 2 Piccadilly Road without incident. Dinner was waiting for me and after dinner we had a call from Ivan; he was living with the Wooler's in 1937. Fixed my catch, wrote up my notes and to bed at 10.00.

April 24. First of all went to the Jamaica Auto Association to meet Miss Nixon and Mr. Duquesnay. He offered a 1937 Ford coupe for Six pounds a week. We went first to a photographer for a sitting (finished prints to be ready in one hour), then to the National Bank of Canada for $100 in British (Twentyfour pounds, thirteen shillings and four pence), back to the J A A to prepare the papers (rental of car and application for driver's permit), back to the photographer where the prints were ready (in less than an hour) and to the traffic Bureau. No trouble in getting permit (Ten shillings). Back to the J A A to get the car and then back to the Institute.

The first thing to do was to put away the sea-urchins that I collected at Goat Island. They had been too long out of preservative and were quite high, though not as bad as Bernard's crab ! The urchins were very abundant on the mud layer in among the mangroves. Some had even crawled up onto the mangrove roots. When I went in for my swim I found it difficult to avoid stepping onto them, in fact I did sit on a couple, but the mud was so soft and the urchin's spines so short and blunt that no damage was done. I found Norris flat on his back in considerable pain. He had apparently hurt himself lifting and carrying logs. We all hope for a quick recovery. Started for 2 Piccadilly Road for a late lunch. It proved to be a very late lunch because I lost myself and drove all over creation before finding a landmark that I could recognize. Finally found myself on the Spanish Town road and worked my way to Cross Roads from there. After lunch drove to Hope and had a good talk with Edwards and Dixon, mostly about termites. It was suggested that I meet the new Director, Jones, late of Trinidad. He was a welcome relief after my experience of 1937 with Barnes. This time I was asked to sit down and with Edwards, the three of us had a very pleasant and satisfactory discussion of the entomological problems of the island. It is evident that Edwards will be encouraged to do some real research if he is so inclined and can probably get the funds to publish it in the station journal. Probably my imagination but there seems to be a better atmosphere about the office of the entomologist than there was at the time of my last visit. Made arrangements with Dixon to go out with him to see the major termite infestations in Kingston. In 1938, Dixon was made Senior Assistant and given the termites as his particular problem. We will also try to get out onto the Palisadoes before I leave and investigate a species that is living in the dead Acacia branches there. I left the station about 4 PM and drove home by way of 5 Cargill Ave. to call on the Woolers.



W. B. Dixon.

Mrs. Wooler was out for tea and dinner and Eleanor, now Mrs. John Blennerhassett, and Mannie were just leaving for some tennis. A letter from Marjorie was waiting for me and with that I departed for Piccadilly Road where I had orange juice in lieu of hot tea. Marjorie has been transferred, more or less permanently, to Frome, the location of the large sugar factory of the West India Sugar Co., Ltd. That means that I will work the region about Alley from Kingston or perhaps from Mendez Pen. I answered the note, asking for information about stopping places in or near Sav-la-Mar. That would put me half way between Bluefields and Negril and I shall want to work both of those regions.

Before dark, I wandered around the place and collected five or six species of ants. Dinner about 8 and bed about 10.

April 25. Left house at 7.30 and started for Annotto Bay. Just beyond Half Way Tree, took the left or old Stony Hill road which runs over Mammee Hill. Commenced roadside collecting as soon as I was away from dwellings. At a point about a mile below Bellevue I found two logs at the side of the road both of which had colonies of Heterotermes convexinotatus Snyd. When I had scooped the termites I could see many small brown larviform animals crawling about in the galleries. A series of about 70 specimens were taken and the species was later identified by H. G. Barber and H. Morrison as belonging to the genus Termitaspis (Heteroptera). As far as I know, this is the first termitophile to be taken on the island. There was also a nest of Pheidole fallax var. ovalis Forel in the same logs. Moved on to a ford just above Bellevue and about 1 mile SE of Stony Hill. As the collecting proved quite good, I decided to stay there for the day. Just before reaching the ford, my eye fell on a peculiar carton nest up the bank from the road. It proved to be Nasutitermes but seemed out of place. It was about 14 inches in diameter, hemispherical and partly below ground. It enclosed a small stump. The species appears to be N. costalis and the ground habitat may be normal for this species. At the ford I took a good series of a tingid and various miscellaneous insects by sweeping. Under stones there were colonies of various species of ants, including Euponera, Odontomachus, Anochetus and Cyphomyrmex. Away from the road and along a path leading into the woods I found a very old log that contained larvae and adults of Macraspis tetradactyla. After lunch I continued collecting until the rain became too hard and wet the foliage too much. Between showers I pushed on toward Stony Hill, stopping once at a small grove of cacao. Very little to be found beneath the pods; they were either too green or too dry. Jumped across a small stream into a citrus grove where I took a few coccinellids by sweeping. Back to town by way of Stony Hill and Constant Spring. Stopped in at 5 Cargill Ave. for a very pleasant visit with Mrs. Wooler, which included tea and later a scotch and soda. Then back to Piccadilly Road for a bath and dinner. During dinner the phone rang and Mrs. Bovell was on the other end. She came over immediately and we went for a slow ride in her Austin, ending at Watts for a Cocomalt. I am invited to come to Mendez Pen at any time and to stay for as long as I care to. Also I am to write to Kensworth and invite myself for overnight when I go to Sav-La-Mar. Mrs. Bovell thinks that I should put off the west end trip for awhile because Marjorie may get a house and if she does that would be more pleasant than a guest house. She also told me of the bust up at Caymanas - P. A. was fired on six days notice. He didn't tell her for two days, by which time he had made such arrangements as he wished. He was to go to Derry with Marjorie, the Savariaus were to be transferred to Kensworth and Mrs. Bovell was to go to Mendez or any other place that appealed to her (except Derry). The thought that Marjorie would get a job of her own probably never entered his head. But she did and he has been alone now for two years. We parted company at 11 PM.

April 26. Reached Hope at 9 AM and Edwards, Dixon and I started out to inspect termite infestations. First to the freight docks where both Coptotermes and Heterotermes are working in the piling. While not confined to them, the outer piles show a much greater tendency to infestation than those nearer in shore. The location of the queen cell is in doubt; it does not seem possible that it can be on land and connected to the outer piles (nearly an eighth of a mile away) by tunnels. Next to the bonded warehouse of Wray and Nephews. It is a long low building containing about a million gallons of rum, stored in vats holding 40,000 gallons each. The vats weigh about 25 tons a piece and are supported on a trestle made of 10 x 10 timbers, which have been heavily creosoted. These timbers are generally infested by Coptotermes and the problem of eradication is a difficult one. No poison may be used nor any insecticide with an odor that might be absorbed by the rum. No plan of campaign has been worked out yet. Then to the Low Temperature Station where the original infestation of Coptotermes was found. There was no sign of recent activity there and that colony is probably completely killed out. Dixon has a "graveyard test" area on the lawn near the Station and examined many of the wood billets. Some of the hardwoods are showing immunity to Heterotermes. From there back to Hope where I had left my car and to Piccadilly Road for lunch. Just after 2 PM

Mr. and Mrs. Edwards called for me and we started for an overnight trip to the north shore. As we passed through Spanish Town I noticed that the King's House seemed to be rebuilt but later I learned that only the front wall and portico had been replaced. The repaired building is not nearly as picturesque as the ruins were but the change was probably necessary in order to preserve what was left. At Linstead we left the main road to visit a place that was infested with duck-ants. We found that a shed where box shakes were stored was well overrun with Nasûtitermes (later identified as N. costalis). The colony had gained entrance beneath the sill in the far corner and there was no carton nest to be seen any where around. Then back on the main road, through Ewarton, to Moneague. Here we turned off to stop at the Moneague Hotel for a talk with the Commissioner of Education. After leaving the hotel we made no further stops until we reached Runaway Bay and Eaton Hall. We registered and were assigned to rooms and immediately prepared for a swim. The water on the north shore is distinctly colder than that on the south and was really invigorating. After our swim we had beers around, then dinner and to bed early.

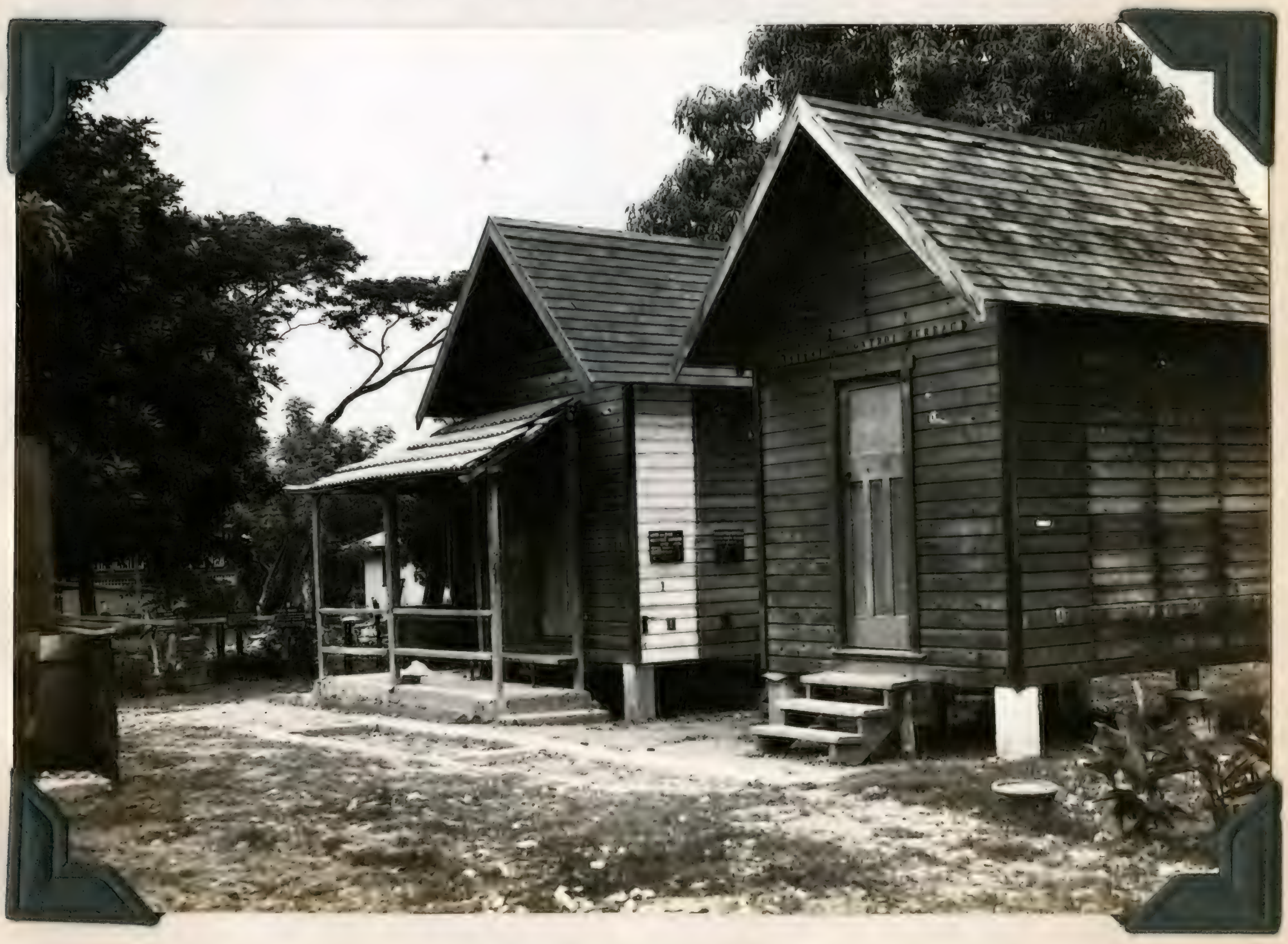
April 27. Up at 6.30 for an early swim. The Edwards were to meet me in the water but they slept over and I paddled around the cove for an hour before I saw either of them. Then breakfast and afterwards I went out on the rocks to collect. Some ants and a sample of marine gastropods were all that I could find. Paid our bills (mine was twelve shillings and one and six for tips) and left for Seville, now a large coconut walk but originally the site of the first Roman Catholic cathedral (1505). The foundations have been cleared and in the center of the floor there is hole about six feet across and ten feet deep, carefull walled with brick, from which a passage leads away to the west. In this passage were found a dozen pieces of very beautifully carved stone, probably the remains of the altar. One piece has the coat-of-arms of the Bishop of Seville, the others are mostly angels and cherubims. No attempt has been made to explore the passage ! These stones are now in a shed near Seville house but it is hoped that the owner will see fit to put them in the Institute. On the way out of the estate we collected a sample of the duck-ants that are ruining the few canes that Seville grows. The infestation is not a new one, if the old records can be interpreted to mean "white ants" when they read "ants". Very early Seville was abandoned by the Spaniards because of a plague of "ants" and the whole district was known as the "ants nest". Coconuts seem to get along all right but no quantity of canes can be grown in this region. From Seville we drove to the Edwards' new place near St. Ann's Bay where they are building a new summer place on a low cliff overlooking the water. This particular cove is supposed to be where the Niña foundered and was called "Casa Niña" by the Spaniards. We went in for another swim but it was not particularly pleasant as there is no sand at all and the coral rock is very sharp. Had lunch and did a bit of sweeping, getting a few good things. Also collected a sample of snails from the rocks. Right by the house there is the mouth of an underground stream and Edwards is trying to dig a channel from the sea to the mouth of this stream so that he will have a safe anchorage for a small boat. A great deal of blasting is involved and that seems to involve a large amount of red tape. It appears that at least two government officials must be present when dynamite is used anywhere on the island. We left at 2 PM , headed for Ocho Rios. At White River I found a log on the beach which contained a colony of Heterotermes convexinotatus but no termitophiles. We stopped again to make a short call on Mr Hutchins, who was about to make a trip to Boston, his original home. He seemed like a nice chap and certainly has a nice place. Back across the island by way of Fern Gully. After going through Spanish Town we turned up the Sligoville road to another place of Edwards. This is a 500 acre pimento estate with a fair house. The collecting was reasonably good and I beat the shrubbery while Edwards tended to some business matters. Then back to Piccadilly Road, having left my fountain pen at Eaton Hall and my bathing trunks in Edwards' car. Had dinner and in the evening Bernard and Lucille called and we talked over the plans for the trip to Cinchona. Lewis can get in four days and perhaps Norris will come along. We will go there by way of Chestervale and Clydesdale, sending our duffle to Cinchona by mule, while we walk. Lewis wants to look over the buildings at Clydesdale because they have an offer of one of them for a station. If it works out properly, Lynn, Buck and company will make it their headquarters when they come down later in the season. We will use the Forestry cabin at Cinchona because Christopher Swabey will probably be in the party.

April 28. Phone call early from Lewis that the new sea cow was dead and did I wish to do a post mortem on it. I finished labelling yesterday's catch and got ready to go down. Mrs. Dignum found that her car batteries were dead again (short circuit somewhere that hasn't been found) and I gave her a lift down town. Dropped her near the Institute. I found the manatee out of the tank and on a table under the windows of the library where the readers would get all the smells. I made the first incision as carefully as possible but the gas pressure was very strong and I didn't quite get out of the way. Bernard wanted to save the skeleton so I cut carefully and eventually laid open the abdominal cavity and cut away the diaphragm. The harpoon had gone in much deeper than we thought, driving through the lungs and into the abdominal cavity. The liver and spleen had both disintegrated and the lungs were completely collapsed. A general postmortem was of course not possible but the stomach and the alimentary tract were opened and examined. The stomach contained a few nematodes, was otherwise empty. The small intestine was unusually clean and contained only two nemas that probably represented postmortem migration from the stomach. The caeca were double, very short and clean. The colon was heavily infested, as was to be expected, with the amphistome fluke, Chiorchis fabaceus. While I was in the midst of the mess, a very pleasant young woman in a spandy clean white dress appeared and wanted to help. Bernard introduced her as one of the science teachers and believe me she was a glutton for knowledge and no shirker of dirty work. She did her share til the job was over at 12.30 and I am sure that she regretted that the other animals in the zoo were all healthy. We washed in formaldehyde but the smell stayed on my hands for days. From the Institute I went to El Corte Ingles for a suit and white pants. Then to lunch at Piccadilly Road. Drove to Mendez Pen, arriving at about 3 PM. Mrs. Bovell found an old pair of pants and a polo shirt that belonged to Don. We walked over the property, getting into some of the thickest tangles of thorn bushes and high grass that I have seen on the island. The trees are small, mostly logwood with quite a good new grouth of lignum-vitae that Mrs Bovell is encouraging. By and large, for a cattle pen it is free from ticks as I found only one seed on me that night. There is good pasturage and the place pays enough so that the mortgage is being reduced regularly. Just at present everything was dry and there was no collecting. We talked til seven when I started back to Kingston. Got off the road at Spanish Town and saw all the back roads in the place before I got back on the main road. Left main road at the turn to Half Way Tree and so to Piccadilly Road. A good dinner at eight and to bed early. Tomorrow Dixon and I plan to do some termite inspection at the Institute and elsewhere.

April 29. Raining softly when I woke up and the bad weather continued nearly until noon. After lunch I went to Hope to meet Dixon and before starting out we looked at some of the new buildings on the

New Insectary at Hope.

station grounds. There is a new insectary that will help to stimulate rearing work and there are two



Termite Control Demonstration buildings.

small houses so constructed as to show good and bad practices in reference to termite infestation and control. For instance, each foundation post is differently constructed and a small label nearby tells why the construction is good or bad. The sides of the buildings have been used to demonstrate different surface finishes and in each case a statement showing cost per gallon, coverage per gallon and cost per square foot is given, with remarks on the effectiveness of the finish.

After viewing the buildings, we started out, going first to the Institute. While Dixon traced an infestation of Coptotermes havilandi from basement to attic of the old building, Lewis and I talked over plans for the Cinchona trip. He will see Swabey this afternoon and try to set a date. I also had time to do a little more buying at El Corte Ingles before Dixon was ready to go back. He dropped me at Piccadilly Road for lunch. After lunch I took a tram to Hope to get my car, left there in the morning. It took nearly an hour to get from Piccadilly Road to Hope by tram, whereas by car I make it in twelve minutes. With the car, I ran up the old Stony Hill road to the ford. Sweeping was pretty good along the roadside; took a Palaminus and some other staphylinids as well as some ants. Went back to Piccadilly Road in time to have a bath before dinner. Bed early.

April 30. Good Gravy, what a night last night was ! Lewis came late, on his way to another engagement. Weather permitting, we were to go to Cuna Cuna today and to Cinchona a week from today. Both Lewis and Swabey can go if the trip is put off until then. After Lewis left, a local enthusiast appeared with a collection of poorly spread and completely unlabelled butterflies and a few other insects. He had a specimen of Triatoma but nothing else that interested me. He talked on and on until 11.45. Rain had started about 10.30 and kept up until early morning, coming in very hard gusts. About midnight the telephone rang, announcing the death in childbirth of Eversley's sister, Corita. Mrs. Dignum felt that she had to go over to stay with Corita's mother and the rest of us, unable to be of any help, went to bed. The rain had driven the mosquitoes in and I tossed about until nearly dawn. Mrs. Dignum came home about 6.30 AM and set about to make six dozen chicken and shrimp patties and about 500 hors d'oeuvres for a wedding, these to be ready by noon. Mrs. Bovell called to make sure that I had not gone up into the hills and was washed away. Lewis called to cancel the trip to Cuna Cuna as some of the roads are sure to be washed out. The rain continued off and on all day. Bathed and changed for dinner. At about 8.30 Bernard and Lucille came for me and we went to see Pygmalion. As they had both been up until three (they live with Eversley), both slept more or less through the picture.

May 1. Left Piccadilly Road at 8.30 to go to Hope. Dixon was just leaving for home; he was apparently coming down with measles. Edwards was late and at 9.10 I went to his home where I found him supervising some construction about the place. He is apparently dabbling in real estate. In 1937, he was living partly at the Pagoda (burned down this spring) and partly in the house on Hope Road next door to the place he is in now. Then they were busy repairing that house and as soon as it was in good livable condition they rented it and took over the present place, also greatly in need of repair. Further they have bought the place on the north shore and the pimento estate near Sligoville. Mrs. Edwards found my bathing trunks and verified my suspicion that the pen had been left at Eaton Hall. Saying Good-bye, I started for Annotto Bay, this time by the good road through Constant Spring. A mile beyond Stony Hill I stopped at a banana walk where there were several banana stalks down on the ground and partly decayed. Collecting was very good. Took a few ants, some staphylinids and Metamasius. Also took specimens of the giant histerid, Plesius javanus, a predatory species recently introduced into the island for the control of the banana borer. Later when I reported the capture to Dixon, he told me that after repeated failures in their attempts to establish the species on the island, the colony planted near Stony Hill had taken hold and that this year, more specimens had been recovered there than had been planted out originally. We hope that the Plesius controls the Metamasius before the Panama disease wipes out the banana. Moved on but did not stop at Castleton Gardens as there were several bus loads of

Ripe mangoes.

tourists in. At the last fork in the road, I turned left to Port Maria instead of going on to Annotto Bay. I had decided to collect along the shore road between Port Maria and Runaway Bay and to stop at Eaton Hall to recover my pen. Collecting was best at Dunn's River, so I stopped there to eat lunch. Then on to Eaton Hall where I found my pen waiting for me. At about 2.30 I started back, turning at Ocho Rios. Near Lime Hall I picked up a colored physician who was waiting for a bus to take him to Linstead. He was pleasant and quite talkative, confining his remarks to the war, its causes and effects, and the probable chance that the U. S. A. would eventually take over Jamaica. He was all for it. I said as little as possible but in general agreed with his observations. In fact, most of the natives that I have talked with feel strongly that the island would be better off if attached to us. Store clerks in the stores are very solicitous when they learn that I am from the U. S. but that is of course front. It would be treason to say anything that might in any way postpone our entry into the war. The English say little about the possibility of the secession of the island to the U. S. but I am sure that they will all oppose it. After dropping him at Linstead, I was immediately picked up by the police for inspection of my driver's permit. This, I understand, is routine and may happen at any time. Back in Half Way Tree without incicents where I stopped at the Wooler's to say that I would be in town next Sunday and would be pleased to go there for tea and dinner. Then to Piccadilly Road for a bath. There was a letter from Lucy waiting for me that had come from South Hadley to Kingston in 28 hours. That seems to me to be remarkably fast service. Bernard brought it from the Institute and left word that we will go to Portland Ridge on Saturday. Mrs. Dignum showed me a chair that was infested with Cryptotermes brevis (Walk.) and allowed me to cut away sufficient wood to get at the colony. I recovered a series of workers and one soldier. The "crazy ants" followed me right into the burrows and the next morning the colony seemed completely destroyed.

May 2. A light rain on the plain and could see heavy rains in the hills. Went down to the Institute and found that "Lady Nugent's Journal" has been reprinted with extensive notes by Frank Cundall and is available for seven and six so I bought a copy. Also Lewis gave me a copy of "Mosquitoes of Jamaica" that I will turn in to the Division library or give to Alan Stone. Sherlock and Lewis urged me to give a talk some evening to the Institute's membership on any subject that I might pick. I agreed to speak on "Biological Control" but not until I have returned from Sav-La-Mar. Lack of lantern slides will handicap me and it may not go well.

Worked over my notes and specimens in the afternoon. Reached Edwards' place at 6.30 and found several guests already assembled. Jones and his wife were there and we all talked over our cocktails. Later Pomeroy and his daughter appeared and the rest of the evening was spent listening to him and looking at the Kodachrome moving pictures (mostly underexposed and all of local interest). I remember that in 1937 I was also afflicted with Pomeroy under the same circumstances. At eight we all departed and I had dinner at Piccadilly Road.

May 3. Bernard called for me at 7 AM and we started for Portland Ridge for the day. He is looking for sizable deposits of bat guano as a source of phosphate and he also has a line on a bauxite deposit. We took the main road to Old Harbour, then the first left to Alley and around the bay nearly to the point. Just beyond the sign post "To the Cave" we parked the car in the bush near a path up to the top of the ridge. The rock is honeycomb, like that on Goat Island and the vegetation is quite similar. Started up the path, packing our supplies on our backs. Made two collections of Nasutitermes along the path, one colony living in a carton nest in a tree beside the path and the other coming from a hole in the ground. Half way up I took a sample of Nasutitermes from under bark of a small standing dead tree, in the sound wood of which I found a fine colony of a Cryptotermes, different from Cryptotermes brevis Walk. As the species is certainly new to the island and perhaps new to science, I cut out and saved a piece of the wood showing the galleries. We missed the turn off for the cave and climbed nearly to the top of the ridge. While Bernard scouted around to locate the opening of the cave, I cut down and dissected a bromeliad, finding a few crustaceans similar to Asellus and one caterpillar. Also opened a standing dead tree and found colonies of two different species of Kalotermes. There was a small scorpion under the bark which I got. In the meantime, the mouth of the cave had been located and we started back down. The cave is the largest that I have ever been in, about

C. Bernard Lewis

450 feet long, 150 feet wide and perhaps 70 feet to the highest point of the roof. It was open at both ends and there were at least three small holes in the roof. A large mass had fallen from the roof recently, probably in the 1906 earthquake. I felt too tired to wriggle my way into the tiny bat caves that open out of the large cave so I sat on a stalagmite and waited for Bernard to get his work done. While sitting there I looked back over my shoulder and there about 20 feet behind me was a something. It was perhaps 18 inches high, somewhat dome-shaped, with two large, shining eyes. Behind it was another and still behind, a third. I hesitated, then picking up my cutlass, I walked toward the first one, expecting it to run or fly. I thought of the large nighthawk-like bird that lives on the island. It didn't move and when I reached it, it was only a piece of honeycomb rock with water-filled cavities for eyes. I afterward described it to a black and asked him if he thought it could have been a "duppy". He felt sure that it was and that it had merely changed itself to stone when I moved toward it. So I have seen a "duppy". It was lunch time when Bernard was through with the bat caves and we chose to eat in the mouth of the cave. I collected several species of ants while we were eating, some were forageing away from their colonies, and some from a colony in a dead log. These last were very large, very red and very pugnacious. Bernard had another cave to enter and I started back to find the path and my net and bottles that I had cached before going into the big cave. Instead of finding the net, I found a dead tree with colonies of both Cryptotermes and Kalotermes. By the time those were collected, Bernard had come and he found the cache easily and we went down. We got out eight fence posts to be used in the Institute garden, thereby saving the Institute Six shillings. Then we drove on to a fishing camp to get a supply of manatee grass to feed to the manatee at the Zoo. While talking to the fishermen, a scorpion in Bernard's pant leg stung him four times. We pickled the scorpion, a medium sized one and almost certainly the mate of the one that we had taken earlier in the day. We waited with some anxiety to find out what the effect of the sting would be. Fortunately, this species is not very toxic and in an hour most of the pain and swelling had subsided. We got the grass and drove back, reaching Kingston at about 8. I took a much needed bath and had dinner. We sat on the porch for awhile and talked before going to bed. Tomorrow is Sunday and I planned to rest for the day's trip had pulled me down a bit.

May 4. Today was a lazy day. It rained off and on and when it didn't rain it was very sultry. Put away the material that I collected yesterday and wrote up my notes. In the afternoon went around to the Wooler's. Eleanor and Hazel were both there with their husbands. Eleanor's husband, John Blennerhassett, is in the Immigration Service and has to be at Port Royal three days a week, so Eleanor ("Toots") lives with her mother where there is room for John when he is off duty. Hazel married James Walker, at present serving at the internment camp as a guard. He is quite interested in butterflies and when his collection is installed in his new mahogany cabinet, I am invited to come over and see it. Also present was an elderly M.D., who seemed to me to be somewhat of an ass. Rumour has it that Mrs. Wooler is going to marry him; that seems too bad. We had tea (iced tea had been prepared for my special benefit), later the inevitable scotch and soda was served and dinner was called at 8.30. Went home to bed about 10.

May 5. Went back this morning to our old station on Ferry River. Can see no change since 1937. Even the old abandoned wagon at the end of the road is still there, a little more rusted perhaps. Found good sweeping in the pasture at the right of the road and took a series of a Chrysops and some small bees. Also a sample of a colony of Nasutitermes living in a log. Along the road I took a nice Lycid

Ferry River, above the Spanish Town road.

and a cerambycid that I do not remember of seeing before. At the sharp bend of the road just beyond the spot where I park the car I saw a scarab flying rather high. It eventually came low enough to net and proved to be a Gymnetis that I had not taken previously. (After my return to Washington I identified it as Gymnetis spence, one of the two described Jamaican species that I failed to get in 1937). Other specimens of it were seen but all out of reach of the net. I returned to Cross Roads for lunch and a rest. Later visits to the locality for more specimens of it were indicated. In the afternoon I was persuaded to join Faith, Helen Lake, and Dick in a game of tennis. Both Dick and myself were hopelessly out of practice and our partners were not very helpful because they were laughing so heartily at our earnest endeavors. Helen Lake is the 19 year old daughter of an englishman and a Brooklyn, N.Y. american; is a devotee of Kreisler, prefers Beethoven, talks like a real person and is about to enter McGill University in the fall.

May 6. Bernard, Lucille, Willie and I started early for Cornpuss Gap (usually but erroneously called Cuna Cuna Pass). We went in Bernard's car, Willie and I in the rumble, following the shore road to Morant Bay. There we turned inland and cut across to Bath. At my suggestion we pushed on beyond to our old collecting spot at the Plantain Garden and Indian Cony rivers. It was all different! The cattle pen was now in cane and the remains of the silk-cotton tree that yielded so much to Dick and me in 1937 had rotted almost completely away and what did remain was almost hidden in the cane. However we did find some good collecting in a pile of banana trash near the ford. Then back to Bath and up the road that Dick and I took in 37 but this time we went much farther. We left the car at the shed belonging to the United Fruit Co. and continued on foot. The heavy rains of the last week had loosened the soil and there were five sizable land slips that had almost obliterated the narrow footpath that hugs the side of the mountain. We got through all right except for muddy feet. It was raining steadily, sometimes quite hard, and in general our spirits were not too high. Collecting was possible only in the dead trees, both standing and fallen, and we took some good termites and ants and one very nice weevil. The scenery in the pass is magnificent, with the John Crows rising high on the right and the Blues over the valley at the left. On a clear day it would be one grand place to be. The rain finally drove us in and we returned to Kingston by way of Port Morant, very tired. Bath before dinner at 8.30, bed at 9.30.

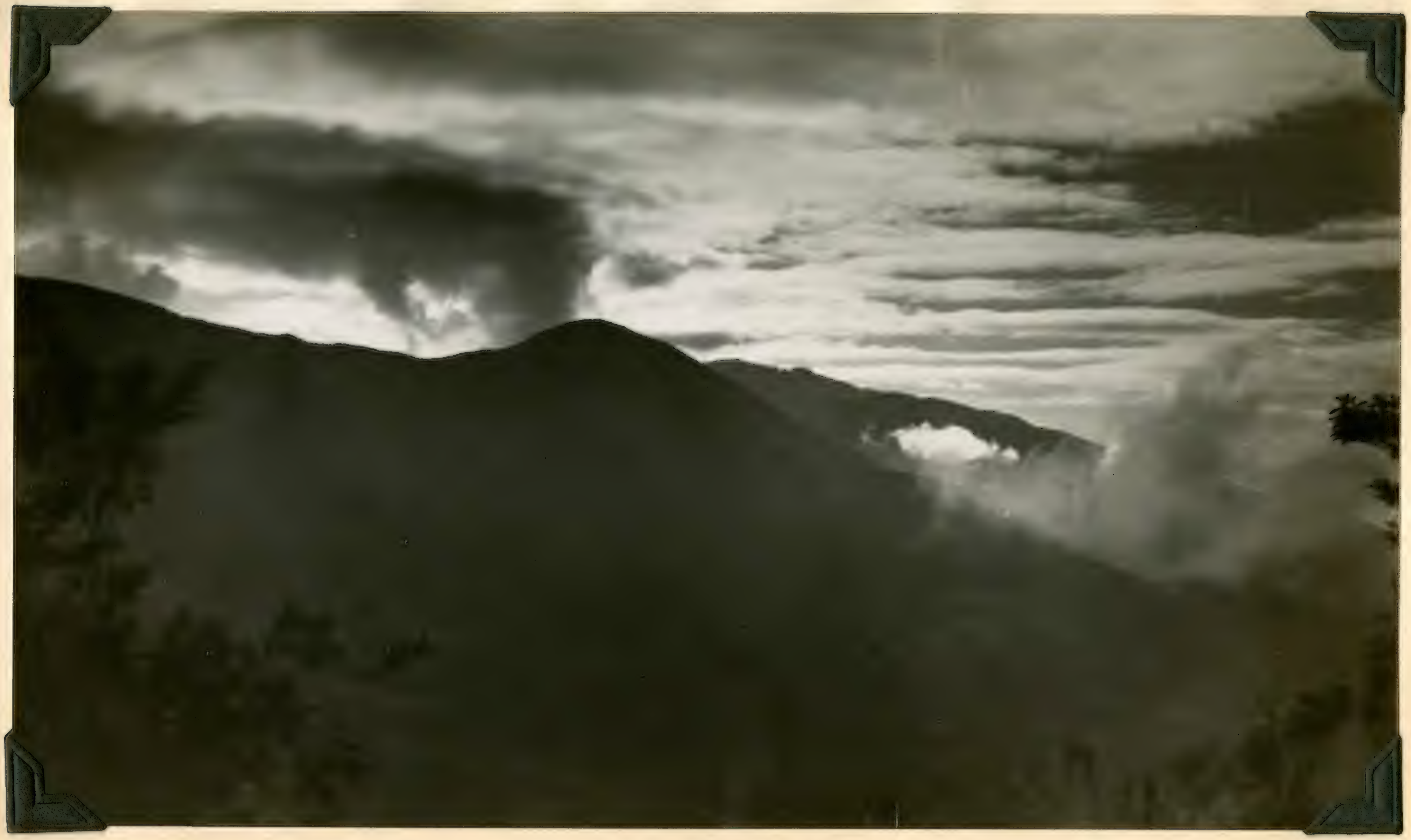
May 7. I was very stiff and lame this morning when I got up, some of which could be blamed on the bad weather of yesterday but most to the long day in the rumble seat. I spent the morning transferring my entire catch to the large vials, packing them for transportation to Washington and refilling the smaller vials for reuse in the field. In the afternoon went into Kingston to get more money from the Royal Bank of Canada. Afterward I went to the Myrtle Bank for a swim which made me feel much better. Had an early dinner and went to bed early.

May 8. First thing in the morning I wrote letters to Clara and Lucy and also one to Mary Savariau in which I suggested that I might spend the night at Kensworth on the 14th. Took net and went back to Ferry River where I took another of the Scarabs as well as several other good things. Am still lame and very glad the trip to Cinchona has had to be postponed a day. Lewis can't get away and Swabey's wife became ill yesterday and he doesn't dare leave Kingston. Still raining hard in the mountains. Another swim and sun bath.

May 9. Lewis called early to say that we would meet at his house at 8 AM. We were delayed by nails in Lucille's shoes and didn't start until 8.30. We stopped en route to buy gasoline, flashlight cells, cigarettes and to pick up the mule hampers and blankets at Swabey's. He

Forester's cabin at Cinchona (C. B. Lewis).

will not be able to go as his wife is no better. In addition to what we expected to take he had two live ducks to go to the caretaker at Cinchona. We put a duck in each hamper and started for Newcastle. It is only thirteen miles from Gordon Town to Newcastle but with more than 300 hairpin turns in the road it takes a full hour to drive. We stopped just beyond the barracks to enjoy the view of Kingston far below and then pushed on through Hardware Gap and Silver Hill Gap to Chestervale. Here the mule was waiting and after some dickering, we transferred the hampers, now containing the bedding and food, to the mule and with the ducks under our arms we started on foot for Clydesdale. That is a very easy walk with very little change in altitude. Each time we crossed water the ducks raised a howl so we let them wet their feet and take a drink at each place. Collected along the path as we went, getting a few good things. Stopped at Clydesdale for lunch and for Lewis to go over one of the houses that is to be turned over to the Johns Hopkins bunch next month for a field headquarters. Anchored the ducks in the Clyde River which seemed to please them very much. There was an abundance of yellow raspberries, a species native to the Himalayas and which grows well in the Blue mountains at altitudes above 4,000 feet. Left Clydesdale at 2 PM for the last mile and a half to Cinchona. It's a very hard climb along a mule path bordered with yellow raspberries and a very large species of bracken. I had to lie down at the side of the path several times before we finally reached Cinchona, more than a thousand feet above Clydesdale. Reached there about 3.30 and Lucille had a fine meal ready at 4. It certainly tasted good. The caretaker had the fire in the fireplace and in the cookstove going and a good supply of wood handy by. The mule and boy had come and gone, leaving our dunnage in the front vestibule. After eating we cut stakes to set up the trap light which we placed in a hollow where it could not be seen from the sea. Then we made beds and settled ourselves for a few days. The fire in the cookstove had gone out by this time and because of the dampness in the wood we had a bad time starting another. Got it going eventually and had dinner at about 9.30. Shortly thereafter we finished clearing away the dishes and went to bed. The cabin is in the midst of what was once the Botanic Garden and the scenery is magnificent. The cabin faces south and from the front door one may see Kingston and Kingston harbor through a gap in the Port Royal mountains, 5,000 feet below.



Mossman's Peak, from Cinchona.   Photo by Norris.

THE FORMATION OF THE NATURAL HISTORY SOCIETY OF JAMAICA

During the week of August 25th, 1940, a party of seventeen took part in a field trip sponsored by the Institute of Jamaica. That party of people has formed the nucleus of the Natural History Society of Jamaica which now numbers 35 members. Realising that no experts on the Jamaican flora and fauna were available, the objects of the field trip were to pool information and to learn together.

The Great House and the Coffee House at Clydesdale served as headquarters for a full week of Nature Study. The valley of the Clyde River and the Blue Mountain regions of Cinchona, New Haven Gap, Morce's Gap and Silver Hill, were explored and collections of the flora and fauna were made. Mr. C.Swabey, the Conservator of Forests, guided the field work and discussions for a full day devoted to the study of soil erosion and conservation.

Resulting from the enthusiasm shown by those who participated in this first venture, a meeting was held at the Institute on September 17th, 1940 to discuss future undertakings. At that time it was unanimously decided to form a Society, and it was agreed that regular field trips would be desirable and useful, especially for Science teachers.

A second field trip was sponsored by the Institute of Jamaica, from January 2nd to 5th, in conjunction with the inaugural meeting of the Society which took place on the evening of January 4th. Mr. Fraser, the Headmaster of Munro College, very kindly offered the facilities of the School as headquarters for this programme.

Foundation members are those persons who were present at the inaugural meeting: Mr. and Mrs. C.B.Lewis, Misses M. and I. Jeffrey Smith, D.Rainforth, O. and E.Baxter, V.Chevannes, D.Alexander, B.Drew, N.Nash, M.Dawson, C.Coole, L.Scudamore, Messrs. R.P.Bengry, W.M.Snee, J.C.Jury, C.Swabey, D.Burrowes, and E.Tai. Mr. Raymond Philipson of the British Museum (Nat. Hist.) who visited Jamaica with the Cambridge University Expedition in 1939, was also elected a foundation member.

The object of the new Society is the encouragement and advancement of the study of Natural History in Jamaica. The constitution of the Society is given on the membership card.

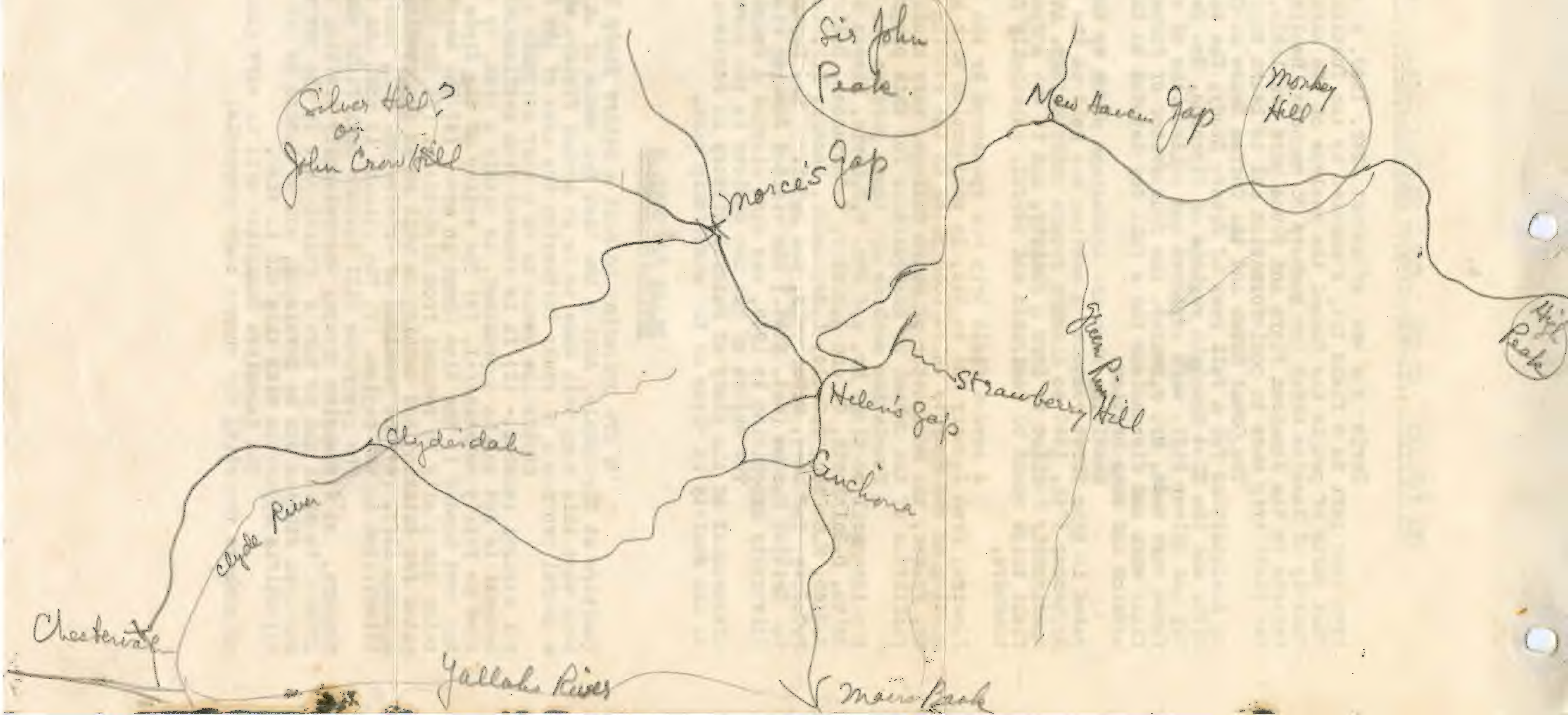
PLANS FOR SUMMER

We are proposing to hold a Nature Study Camp with headquarters at Clydesdale, during the last two weeks of August. Actually, we hope that this camp will come to be an annual fixture which will develop a useful programme of study furthering the aims of the Society.

Clydesdale seems to be a very suitable spot for the camp for several reasons:- (1) It is removed from settlements yet it is fairly accessible and can be approached, to within a mile, by car. (2) Accommodation is fairly substantial. (3) The valley of the Clyde River is probably the best wooded in the Blue Mountain area. (4) The heart of the Blue Mountains can easily be reached from Clydesdale. (5) The Clyde River provides water for drinking and bathing as well as an opportunity for the study of aquatic life. (6) The problems of erosion and soil conservation are well illustrated in the region. (7) The climate is cool and invigorating.

The programme will include much field work, talks by the members, and discussion groups. Occassionally visiting scientists may be induced to speak and to take a general part in the programme. We hope that research studies can be developed, and we intend to get together some scientific apparatus with this end in view.

The Executive Committee will be very glad to have the views of members regarding the summer camp proposals.


Silver Hill?
or
John Crow Hill
Sir John Peake.
Morce's Gap
New Haven Gap
Monkey Hill
High Peak
Strawberry Hill
Green River
Helen's Gap
Cinchona
Clydesdale
Clyde River
Chestervale
Yallahs River
Mavis Bank

May 10. Up at 6.30 to write up notes and label specimens taken yesterday. A good breakfast was served by Lucille and after clearing away, we all started for Monkey Hill by way of New Haven Gap. The trails have been nicely bushed out, thanks to an arrangment of Swabey's and the walking was very good, always up, of course. Near the cabin we passed through a long avenue of pine trees, apparently several species. Some of the trees had died and their stumps were inhabited by a species of Kalotermes, just ready to swarm. I took good series, including winged adults and soldiers. The weather was fine when we started but as we gained altitude the clouds became heavier. Yellow raspberries were frequent along the trail, as they had been below Cinchona. On the last ridge, half a mile from New Haven Gap the rain commenced and it was soon necessary to take shelter under the braken ferns at the side of the trail. The rain came harder and harder and we finally gave up and turned back, soaked to the skin and a bit chilly. At just under 6000 feet I took two dealated termites in a cavity in a hard dead tree trunk, my highest record for any termite on the island. It was raining too hard to collect on the way back so we almost ran back to the cabin. Changed to dry clothing and played cards until dinner. While Lucille got dinner, we took all of the wet clothing and dried it before the open fire in the front room. Bed early.

May 11. Up at 6 for breakfast and an early start along the trail to Morces Gap. First stop was to strip the bark from a fallen tree; nothing of interest except a colony of a small black ant. A little farther on there was a standing dead stump which was full of termites, Neotermes sp. We cut it to pieces and were doing quite well by ourselves when Bernard cut his fingers on my cutlass. He went back to the cabin for iodine and I stayed to work over the stump thoroughly. Found a few soldiers. Before Bernard returned, I moved on to a second and similar stump which contained more of the same kind of termite. However, could find no soldiers in the second colony. By the time I finished there, Bernard came back and we worked along the path, turning stones. Poor collecting, one carabid and two roaches. We stopped for a time at the entrance to a glen and after clearing away a rank grouth of ginger lilies, we found the collecting in the leaf cover fairly good. Took a series of a dark chestnut brown amphipod. another carabid, a very beautiful coral-red and black lycid larva and some roaches. Farther on along the trail we found a place where there was a scorpion under almost every stone. Then the rain started and we turned back. Broke camp and got away at 5.30, reaching the car at

Chestervale at 7, just as it became dark. The drive down the road from Newcastle to Gordontown was both exciting and beautiful, with Kingston right at our feet all of the way. Reached Piccadilly Road at 9.30, had a bath and went to bed.

High Peak (The Peaks at extreme right) from Cinchona.

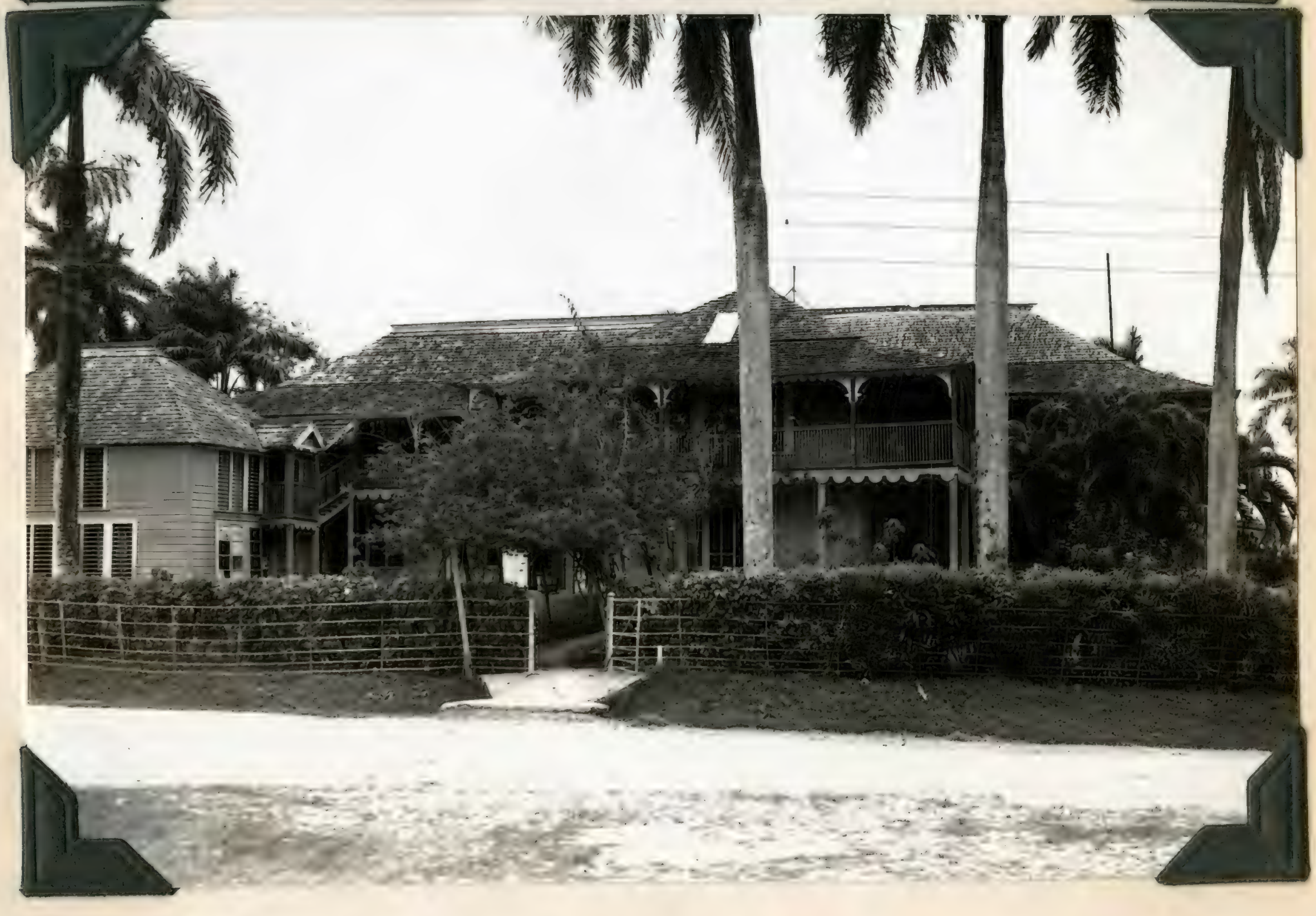
May 12. Much too lame to do any strenuous work today. Put away the Cinchona catch, wrote up my notes and a letter to Clara. In the afternoon, went to the Myrtle Bank for a swim. In the evening before dinner the porch at 2 Piccadilly was full of visitors and I escaped by driving over to Swabey's with Bernard to return keys to Clydesdale, hampers, etc. Swabey's wife still on danger list. Back to the house for dinner and early bed.

May 13. Woke up feeling good, hardly lame at all. After breakfast drove to Ferry River for a morning of collecting. Took two more of the scarabs, some orthoptera, bees, Chrysops etc. After lunch went to Hope and made arrangment with Edwards to hang some traps at Highgate where there is some star-apple. Then to the Institute where Lewis and I went over the insect collection. It is in very bad shape but there is much that is worth salvaging. Lack of definite locality labels is the chief fault, outside of the damage from dermestids. In the evening, Bernard came over and I answered questions as best I could on the collection and preservation of the various groups of insects. Bed about ten. Tomorrow I go to Kensworth.

May 14. Started for Kensworth at eight o'clock. Stopped at Mendez Pen to tell Mrs. Bovell my plans. She may come to Frome later on but can't get away now. Left Mendez at 9.30 and drove straight through to Kensworth (except once when I lost my way) and reached there at 11.30. Had a very pleasant reunion with the Savariaus. Hermance is now 84 and Maix 74, both in very good health. They are quite lonely and welcome visitors. We had a nice lunch and while they took their afternoon naps I did some collecting in front of the house near the grapefruit orchard. Came back to the house at 3.30 for tea, just as the rain started. It continued to rain all night, with a heavy fog. The peenies flew continuously in the rain and many were attracted to my cigarette. I could see the reddish ventral light plainly, especially when one flew low over the porch floor. We all went to bed early and I slept well in spite of a few peenies that got in to the room and zoomed about with all lights on.

Miss Mary and Miss Hermance.

May 15. Started for Sav-La-Mar at eight thirty, stopping in Newport for nine gallons of gasoline. Went on by way of Knockpatrick, Spur Tree, Santa Cruz, Lacovia and the bamboo walk, Luana, Speculation and Bluefields. Stopped to collect just east of Santa Cruz where I took termites and tenebrionids. Also some Aleocharines in soft fungus on log. Stopped again for lunch and to collect at Bluefields Bay. After lunch, drove directly to Frome and found Marjorie. She hadn't changed a bit in four years and I flagged her down as she went by in a car. She turned back to Fontabelle, where she is living, and we talked for half an hour after which she returned to work and i went to Sav-La-Mar to find a place to stay. Was accepted at Windsor, where I settled my belongings and had a shave and wash, wrote up notes to date and put away the specimens taken along the way. Started back to Frome at 4.15 for tea and dinner with Marjorie. She and a



Fontabelle Great House, Frome.

young girl, Joan Whittaker, have Fontabelle all to themselves at present but it is intended that the house will be eventually remodeled a the woman's dormitory for th the whole compound. After tea we wandered over the grounds (it was once the rectory of the district and is beautifully landscaped with palms, etc.). The Frome plant of the West India Sugar Co. is a "central"; that is, it mills cane for the small growers over a considerable area. Its capacity is many times more than Caymanas.

Marjorie is the assistant agronomist and, according to Miss Hermanse, draws four hundred pounds a year which is a very good wage on the island. Joan went elsewhere for dinner and Marjorie and I dined alone. We talked about sugar, the future of civilization, art and books until 10 PM. I found my way back to Windsor where I stirred up all of the dogs. Bed.

May 16. Started about 8.30 for Bluefields Bay. First ran a mile or so up the Beeston Springs road to a good parking space. Collected in dead stumps and under rocks, getting good series of several species of termites. One large stump was heavily infested with a kalotermitid, perhaps Neotermes castaneus. I collected for myself until I had pickled a good series and then I let the lizards have what was left. Four or five small lizards came up onto the stump and kept just out of the way of my cutlass, snatching the termites almost out of my fingers. Further up on the hill I found a nice colony of Cryptotermes with queen and also one of Nasutitermes, also with queen. Then down to the main road where I could see a house that is probably the one in which P. A. Gosse lived about 1850. It is now the Bluefields Hotel. Ate lunch on the sea wall and collected along the road until 2.30 when it started to rain. Returned to Windsor to put up catch and write notes. Continued to rain. Had tea and dinner at Windsor and ran out to Frome about 8 to

House at Bluefields Bay, perhaps that of P. A. Gosse.

call. A nice visit with Marjorie and Joan. Joan is secretary to one of the company officials and fits my conception of a dizzy blonde. Incidently, Marjorie nearly married Joan's father last year.

May 17. Slept until 7.30. Breakfast. I don't think that I can go on drinking the water. It is boiled over an open fire of logwood and it absorbs odors (very bad ones) from the decayed spots on the wood. Lime juice covers it fairly well so I will try to get limeade instead of plain boiled water. Spent the morning in the pasture back of Windsor. Not much to collect; Nasutitermes abundant and several species of ants. Badly stung by Solenopsis. Rained in the afternoon and my hand swelled so that I couldn't use it. Went over to Frome for tea and we had a fine time taking the medical situation on the island to pieces. I told her of Corita's death and she told me that it was not at all unusual, citing similar cases from among her own friends. No matter how well trained and enthusiastic a young medico is when he comes from England, in a couple of years he has settled back into a rut of complacency and indifference. "Fatty degeneration of the brain and sheer laziness" is her explanation of the situation. Joan and George (one of the bachelor Company officials) left for a dance after dinner and Marjorie and I continued our discussion of social conditions until 10, when I left.

May 18. Weather was perfect and with a basket of lunch prepared at Frome, we started for the north shore for a swim. First to Lucea and then on nearly to Green Island. Few beaches and the good ones thickly populated with blacks minus bathing suits. Turned back and drove to Montego Bay and on to Falmouth where we ate lunch. Decided to go to Eaton Hall for our swim and reached there at 2.15. Spoke for dinner to be served at 5 and went into the water. North shore is perfect swimming water, not too hot and not at all cold. Luxuriated for a couple of hours, dressed, dined and started for Frome at about 6.15 and reached there at 9.30. Stopped for a glass of sherry and discovered that P. A. Bovell, Jim and a friend had called on Marjorie that day. Mrs. Bovell knew our plans and she tried to stop P. A. but without success. Collected a series of Dyscinetus on the porch under the light. Left at 10 for Windsor.

May 19. Took lunch and started for Negril Point with admonitions to look at and admire Negril Beach. Country very poor for collecting, flat, dry and given over to logwood. Took series of Solenopsis (without getting stung) and of Nasutitermes. The colony of Solenopsis was living in an abandoned termitarium of Nasutitermes, built near the ground. Back to Sheffield, giving a lift to a black who was evidently anxious to see the U. S. take over the island. At Sheffield turned north on the Green Island road and then to Lucea. Negril beach is very beautiful to look at but I am told that there is no depth of water until one goes out at least a quarter mile so the swimming is not good. Lucea to Sav-la-Mar, stopping along the road to collect. Bath. Dinner at Fontabelle, bed at 10.15.

Marjorie L. R. Bovell.

May 20. Went back to Bluefields Bay. Stopped just beyond the limits of Sav-la-Mar to chop into some logs. Found Zoraptera and ants. At Bluefields Bay, spent morning sweeping foliage along roadsides. Coccinellids, tingids etc., mostly on Lantana. Series of Pseudomyrma running on trunk of large *Coccoloba uvifera*. In very old and long dead stump was a colony of Termes sp. Also colony of a Kalotermes. In another stump (Coccoloba) a colony of Cryptotermes, apparently not *C. brevis*. Rain started about 2.30 I went back to Windsor to clean up and put away my catch and then went to Fontabelle for dinner. Marjorie was in town and after banging on the door futilely I put my mouth close to the slats and called "Mabel". There was a scurry and a giggle and the door opened. "Hello, Doc, I'm Cookie. Mabel's busy." Then, from the kitchen, "Hi, Doc, have some beer ?". I declined and asked after the refrigerator. Cookie said cheerfully, "It seems she has done gone bust." I heard George say that a new Westinghouse had been ordered for Fontabelle so they will have relief eventually. Dinner and a pleasant though somber evening as I leave for Kingston tomorrow.

May 21. Packed, paid bill of three guineas and left Windsor without regret. Ran out the Negril road for one last try. Took some heteroptera that seemed new to me. Stopped at Fontabelle to leave supply of bottles and ethyl acetate. Said final Goodbyes and started for Kensworth. Reached there at 4.45, had tea and supper and talked until 8.30. Bed, fagged out.

May 22. Up at 7 for breakfast. Invited either or both to go to Mandeville and Maix accepted. I drove slowly and carefully and I think she had the time of her life. She bought many small items and when we got back she told Hermanse of every person we passed on the road and of every sight we had seen. Both were pathetically grateful. Had lunch and I left for Mendez Pen about 1. Went all the way into Cross Keys by mistake but then got onto my road and reached Mendez at 3. Mrs. Bovell was getting ready to go to a funeral. We talked about Frome and Marjorie and about the day P. A. missed us. She wasn't at all distressed by the incident. She has a plan for a picnic and swim next Sunday at Alligator Pond and wants me to come. Will go if I can get my talk fixed up on Friday and Saturday. Am to call at 28 Seymour Ave. (off Old Hope Road) tomorrow at 8.30, at which time she will have more news of the party. Reached 2 Piccadilly Road in time for a bath and complete change of clothing. Dinner. Black Jack in the evening on the porch which kept me awake until after midnight.

May 23. Up at 7. Wrote up notes and packed specimens. Went to Institute to read for my talk. Bernard pointed out several references on the mongoose that I was glad to see. This animal was introduced into the island in 1872 as an enemy of the cane rat. A previous attempt to introduce the ferret failed because the chigoe flea killed the young ferrets and prevented multiplication. By 1882 the cost of rat catching had been reduced by 90 percent and the cane damage by 80 percent. (Rat catching cost calculated directly, cane damage indirectly by rum production, as all rum was made from damaged canes). By 1890, the value of the mongoose had passed its peak. It is now and has been for years, a serious menace to the wild life on the island.

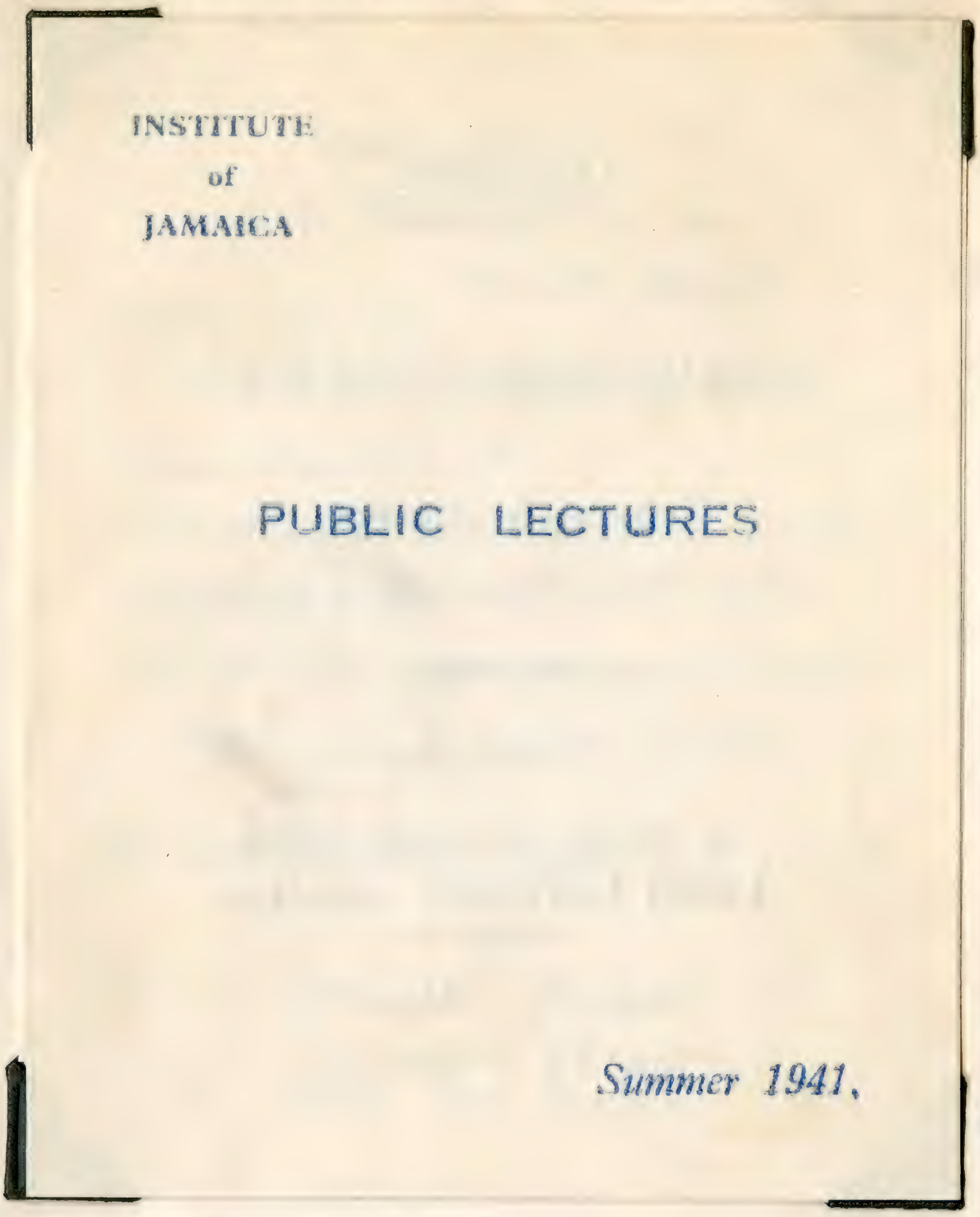
May 24. Stedman took my cutlass to a leather worker to have a sheath made. Will cost five shillings. To Myrtle Bank for bath and swim. Dixie Doodle for lunch with Mrs. Bovell and Jim. He seems very nice, I'm sure I should like him. After lunch, Mrs. Bovell turned her car over to Jim and I took her with me. We stopped at Caymanas to call on Paul and his wife. Paul is OK, don't think I would care much for his wife. Then to Mendez Pen, where we talked until 7, had a light supper and I started back to Kingston. Saturday night makes difficult driving in Old Harbour and Spanish Town. Tomorrow's party off. Reached 2 Piccadilly Road at 9.20. Bed after the 10 o'clock news.

May 25. Sunday. Mrs. Dignum, Faith, Dick and I went to Roselle for lunch and a swim. Swimming is very strenuous there as the beach is shelving, somewhat rocky and with a very strong undertow. Back to Piccadilly Road for early bed.

May 26. Dick joined me for a trip around the east end of the island. Took the road to Annotto Bay, pausing at Castleton Gardens but without leaving car. Collected near Hope Bay in coconut walk, taking ants, millipeds and miscellaneous insects. Stopped just beyond Port Antonio for lunch. Sweeping roadside plants produced little. Stopped at Blue Hole to collect under weed on beach. Many crustacea but no insects. Light rain. Avoided Friendship Valley road because we could see that it was raining very hard in the John Crow mountains. Continued along the shore to Hector's River and Port Morant and then in to Kingston. In the evening visited Jim Walker and Hazel (Wooler) to see the collection of butterflies. Well arranged and mounted but most of the specimens lack locality labels. Walker is especially interested in Lycaenidae and has an excellent collection of this group. He needs help with identifications.

North shore, just east of Port Antonio.

May 27. Went to Institute to make final arrangments for talk this evening. Am permitted to wear white instead of tuxedo. Went to bank for money and to the United Fruit to find out about my baggage. Nathan's and Henderson's for purchases. Lunch. Hope at 2 but no pass yet for the Palisadoes. Picked out termites and fruit flies to take to Washington for identification. Dictated a letter to Col. Hawkins asking again for pass and took it to the post office down town. Then back to Piccadilly Road for bath and early dinner. Bernard called for me and we reached the Institute ahead of the crowd, which proved to be quite small. Mrs. Bovell and Jim were there as well as several from the Institute. The talk went reasonably well though Miss Fletcher sat in one of the back rows of seats and did not hear too well. There were no questions from the audience. Home and to bed.



INSTITUTE
of
JAMAICA

PUBLIC LECTURES

Summer 1941.

Program.

May 28. Went to Hope and found Dixon talking with Col. Hawkins by phone. The letter had not been received but Hawkins said to come immediately and we would be admitted. Reached the restricted area at 10.30 and went first to call on Hawkins. He was very pleasant and told us to go anywhere that we wished. Went into the acacia scrub just beyond the lighthouse. Found Heterotermes in a discarded piece of 2x4 and nests of Crematogaster in dead acacia branches. Moved on a quarter of a mile and located three colonies of the kalotermitid that Dixon had taken previously. Found alates, dealates, soldiers and workers. As the three groups were found in a comparatively small area, they may all belong to the same colony. Quit at 1 PM and returned Dixon to Hope. In the afternoon, Dick and I went to Victoria market to buy jippi-jappa. After dinner went to 28 Seymour Ave. to find Mrs. Bovell. She was not there when I arrived and I was mistaken for a person of color. Most beautifully

LECTURES.

Tuesday May 27

"BIOLOGICAL CONTROL"

BY

Dr. E. A. CHAPIN

Of the United States National Museum

"LIVING, THINKING, AND YOU"

A Series of Lectures by

LEWIS DAVIDSON, Esq. M.A.

ON

May 15, May 29,
June 12, June 26.

THREE LECTURES BY

K. D. CARNEGIE Esq. M.A.

Thurs. May 22:
"OUR DEBT TO GREECE and ROME"

Thurs. June 6:
"THE MESSAGE of SOCRATES for TODAY"

Thurs. June 20:
"THE MESSAGES of EURIPIDES for TODAY"

ALL LECTURES BEGIN PROMPTLY AT 8.15 p.m.

PLEASE COME
AND
BRING YOUR FRIENDS.

snubbed. We met later and drove to an icecream parlor where we could sit and talk. Returned her to Seymour Ave. at 11.30. Black Jack at Piccadilly Road again, played until 1 AM and then went to bed.

May 29. Up about 8 AM. Took box of spare bottles to the Institute and brought the tank with the seaurchins to Piccadilly Road when I returned at noon. After lunch, went to Hope to say my goodbyes to Edwards and Dixon. Sorted out more termites that had not been seen by Emerson and took a collection of ants on slides that had been made by Gowdey. Piccadilly Road for lunch and found a note from Marjorie saying that she would be in Kingston the night of the 30th. Went to the Wooler's to see them for the last time and fortunately found them all there. Then to 28 Seymour Ave to see if Jim can go with me to Spanish Town tomorrow night. In the evening, Bernard and Lucille came over with his booby and egg bird pictures. We also went to the Rainbow for Pepsicola.

Manchioneal Bay from the south.

May 30. Met Lewis at 8 for last trip. We drove out Windward Road nearly to Sugarloaf and turned left up a gully to Cane River Falls. Took good termites in dead stumps, Kalotermes, Cryptotermes, Termes and Nasutitermes. In the afternnon went for my last film pack and took all films to the Censor for his OK. Back to Piccadilly Road to dress and for tea and to say So long to Dick who sails tonight on the Lady Rodney. Picked up Jim and drove to

Spanish Town. Met Marjorie and we swapped cars, Jim taking hers. Went to Watt's for chicken salad and to talk. Started for 28 Seymour at 10 PM.

Aki or Akee.

May 31. I sail today. Went first to War Finance to get permission to reconvert my money into U.S. Then to Victoria market, Royal Bank of Canada, J.A.A. to turn over car to Miss Nixon to be returned to Mr. Duquesnay. Met Marjorie and drove her car from then on. Bernard took my baggage to the pier because my trunk would not go in the Ford. Myrtle Bank for lunch and then to the United Fruit co. Boat will sail late so we went back to Myrtle Bank until 2. Then to pier where we found Bernard and Lucille waiting. They have been very good to me. Boat will sail at 4 so back to the Myrtle Bank. Went aboard at 3.45 and we actually started at 4.15 PM.

June 2. Off Hatteras. We are now in the midst of the herd of bottlenosed dolphins headed north on their annual migration. As far as one can see, in every direction, there are thousands of dolphins moving steadily northward. On either side of the bow, our boat is convoyed by ~~from~~ groups of from three to ten animals. From time to time, these groups would leave to boat and their places would be taken by other and fresh groups. We first sighted them at four in the afternoon and they were still with us at dark.

Margery Ann Davidson

Born Sept. 30, 1945

Photo Mar. 30, 1947

Check list of the Ants of Jamaica.

Ponerinae

1. Ectatomma (Holcoponera) strigatum (Norton).
Kingston, Port Antonio, Balaclava.

2. Ectatomma (Holcoponera) striatulum Mayr.
Newton, Kingston.

3. Ectatomma (Gnamptogenys) interruptum Mayr.
Mandeville.

4. Platythyrea punctata var. pruinosa Mayr.
Kingston, Balaclava, Mandeville, Montego Bay.

5. Euponera (Trachymesopus) stigma (F.)
Montego Bay, Cinchona, Manchioneal. EAC

6. Pachycondyla harpax (F.)
Balaclava.

7. Anochetus mayri subsp. laeviusculus Wheeler.
Troy (type locality).

8. Leptogenys puncticeps Emery.
Newton.

9. Odontomachus haematoda (L.)
Kingston, Port Antonio, Troy, Balaclava.

--- haematoda var. hirsutiusculus F.Smith.
Balaclava, Mandeville, Kingston, Moneague.

--- haematoda subsp. insularis Guérin.
Liguanea Plain.

--- haematoda insularis var. ruginodis Wheeler.
Montego Bay, Newton.

10. Ponera foeda Forel.
Troy.

11. Ponera opaciceps Mayr.
Troy, Newton, May Pen. EAC

12. Ponera trigona var. opacior Forel.
Newton.

Myrmicinae

13. Pseudomyrma flavidula var. delicatula Forel.
Kingston, Troy, Mandeville, Balaclava.

---- flavidula var. capperi Forel.
Kingston, Lapland (near Catadupa).

14. Pseudomyrma elongata Mayr.
Port Antonio, Troy, Balaclava, Kingston.

15. Pseudomyrma gracilis (F.)
Balaclava.

16. Pseudomyrma brunnea F.Smith.
Lapland (near Catadupa).

17. Pseudomyrma eduardi Forel.
Newton.

18. Monomorium destructor (Jerdon).
Kingston.

19. Monomorium pharaonis (L.)
eac Troy.

20. Monomorium floricola (Jerdon).
Port Henderson, Hope Bay, Kingston, Bowden.

21. Monomorium carbonarium subsp. ebeninum Forel.
St. Margaret's Bay, Port Antonio, Kingston,
Mandeville, Balaclava, Montego Bay,

22. Cardiocondyla emeryi Forel.
Kingston, Balaclava, Troy, Liguanea Plain.

23. Tetramorium guineense (F.)
Montego Bay, Port Antonio, Troy, Balaclava.

24. Tetramorium (Tetrogmus) simillimum Roger.
Troy, Balaclava.

24a. See Additions.

25. Wasmannia auropunctata Roger.
Port Antonio, Balaclava.

26. Solenopsis geminata (F.)
Kingston, Port Antonio, Troy, Balaclava, Newton,
Liguanea Plain, May eac Pen, Negril Point.

27. Solenopsis azteca Forel.
Mandeville.

--- azteca var. pallida Wheeler.
Port Antonio, Mandeville, Balaclava.

28. Solenopsis hammari Mayr. (ident. dub.)
Mandeville.

29. Pheidole fallax Mayr.
Kingston, Balaclava, Newton.

--- fallax var. ovalis Forel.
Kingston.

30. Pheidole megacephala (F.)
Kingston, Mandeville, Cinchona.

31. Pheidole punctatissima subsp. jamaicensis Wheeler.
2.5 mi. west Port Antonio (type locality), Troy.

--- punctatissima jamaicensis var. barbouri Wheeler.
Cinchona.

32. Pheidole radoszkowskii var. opacissima Forel.
Kingston, Newton.

33. Pheidole subarmata Mayr.
Port Antonio, Balaclava.

34. Pheidole caribbaea Wheeler.
Mandeville, Balaclava, Troy, Newton.

--- caribbaea subsp. sloanei Wheeler.
Newton.

35. Pheidole flavens Roger.
Kingston.

--- flavens var. thomensis Emery (ident. dub.)
Mandeville.

35a. See Additions

36. Pheidole floridana subsp. stomachosa Wheeler.
Newton.

37. Pheidole (Ceratopheidole) hecate Wheeler.
Troy (type locality).

--- --- hecate subsp. malevola Wheeler.
Yallahs Valley (near Blue Mts.), Kingston (type locality), Newcastle.

--- --- hecate subsp. bruesi Wheeler.
Newton.

38. Crematogaster steinheili Forel.
Kingston, Port Antonio.

39. Crematogaster brevispinosa Mayr.
Troy, Mandeville, Kingston.

---- brevispinosa var. minutior Forel.
Balaclava, Kingston.

---- brevispinosa subsp. vicina André.
Moneague, Newton, Kingston, Balaclava, Troy.

40. Cryptocerus (Cyathocephalus) varians F.Smith.
Kingston, Half EAC Way Tree.

41. Rhopalothrix simoni var. wighti Wheeler.
2 mi. west Port Antonio (type locality), Troy.

42. Strumigenys alberti var. nigrescens Wheeler.
Mandeville (type locality).

43. Atta (Trachymyrmex) jamaicensis André.
Kingston.

44. Cyphomyrmex foxi André.
Kingston, Newton.

45. Cyphomyrmex rimosus Spinola ~~minutus Mayr.~~
Port Antonio, Balaclava, Troy, Mandeville,
Liguanea Plain, EAC Gordontown.

Dolichoderinae

46. Tapinoma melanocephalum (F.)
Kingston, Port Antonio, Montego Bay.

47. Forelius maccooki (Forel)
Kingston.

48. Dorymyrmex pyramicus Roger.
Montego Bay.

---- pyramicus var. niger Pergande.
Balaclava, Kingston.

49. Iridomyrmex iniquus Mary.
Troy, Mandeville, Kingston, Cinchona.

---- iniquus var. nigellus Forel.
Kingston.

Camponotinae

50. Brachymyrmex minutus Forel.
Mouth of Rio Grande.

51. Brachymyrmex heeri Forel.
Kingston, Mandeville.

---- heeri var. obscurior Forel.
Mouth of Rio Grande, Troy, Balaclava, Kingston, Mandeville, Cinchina.

Paratrechina
52. ~~Prenolepis~~ (Nylanderia) fulva Mayr.
Port Antonio, Troy, Mandeville, Kingston.

Paratrechina
53. ~~Prenolepis~~ (Nylanderia) longicornis (F.)
Port Antonio, Kingston, Newton.

Paratrechina
54. ~~Prenolepis~~ (Nylanderia) vividula Nyl.
Cinchona.

55. Camponotus capperi Forel.
Jamaica.

---- capperi var. formosulus Wheeler.
Troy (type locality), Mandeville, Balaclava.

---- capperi subsp. corticalis Forel.
Hope Gardens.

**** capperi subsp. subdepilis Wheeler.
Port Antonio (type locality), Troy, Balaclava.

---- capperi subsp. unctulus Wheeler.
Newton.

56. Camponotus fugax Forel.
Hope Gardens.

56a. See Additions.

57. Camponotus conspicuus F.Smith.
Kingston, Port Henderson, Liguanea Plain, Montego Bay.

58. Camponotus maculatus subsp. picipes (Oliv.)
Mandeville.

59. ---- maculatus subsp. jamaicensis Wheeler.
Newton (type locality), Liguanea Plain, Mandeville.

60. Camponotus hannani Forel.
Kingston, Port Antonio, Montego Bay, Troy, etc.

---- hannani subsp. willardi Forel.
Kingston, Moneague.

Additions to the List of Jamaican Ants, from my collecting in 1941.

24a. Tetramorium lucayanum Wheeler.
Cross Roads.

35. Pheidole flavens var. vincentensis Forel.
Savanna-la-Mar.

35a. Pheidole sp. (flavens group)
Portland Ridge.

56a. Camponotus (Pseudocolobopsis) sp.
Bluefields Bay.

Femoral and tibial pile dark. *Wings:* rather heavily tinged throughout with brown, the stigmal cell quite dark brown, the allulae linear.

Female. Similar to the male; the front has a continuous, diffuse, slender brownish stripe, the dark pubescence is less in evidence upon the scutellum, and the abdominal pattern is very similar.

Holotype: one male, Sao Paulo, Osasco, April 6–8, 1939, J. Lane, collector. Allotype: one female, same data.

A REMARKABLE NEW SPECIES OF THE GENUS PSEUDACTEON (DIPTERA : PHORIDAE).

By Charles T. Greene,

Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture.

In three genera of the dipterous family Phoridae, *Apocephalus* Coquillett, *Melaloncha* Brues, and *Pseudacteon* Coquillett, all of which are known to occur only in the Western Hemisphere, the female has a large, exserted, horny ovipositor. In the new species described below the ovipositor is exceptionally large, being relatively much broader and deeper than in any of the described species of the three genera.

Pseudacteon grandis, new species.

Female.—Length 1.75 mm. Dark brown. Front about as broad as long, gray dusted, with a shining black, central, vertical stripe which bifurcates and extends narrowly around the ocellar triangle; 4 transverse rows of frontal bristles; first, third, and fourth rows with 4 each; second row with 2, 1 bristle on each outer side; on each side of the front between the first and third rows of frontals 2 vertical rows of very minute hairs, 3 in each row; postantennal pair converging, proclinate. Third antennal segment oval, dark brown, with a narrow ochraceous area along the base and with pale microscopic pubescence; arista one and one-half times as long as third antennal segment, microscopically pubescent. Palpi pale yellow, each with 4 black spines apically; proboscis pale luteous.

Thorax much broader anteriorly, faintly dusted; scutellum with 4 bristles, anterior pair much the smaller; halteres yellowish white; legs pale yellow with brown infuscation on the apical third of hind femur. Wing with third vein simple, ending before middle; second costal area twice as long as third; costal fringe short, only slightly longer than thickness of costal vein.

Abdomen dull brown with last 2 segments edged posteriorly with white and with several bristly hairs on each side. Ovipositor (fig. 1) very broad, shining black, horseshoe shaped, bilobed, with a central process which has 4 bristles apically; across basal portion of arch a transparent colorless membrane, and along the edge a row of 10 small hairs; above this row 2 vertical rows of 4 fine hairs each.

Described from two females.

The type is from Negril Point, Jamaica, Station 583, May 19, 1941, Dr. E. A. Chapin collector. Taken in association with the ant *Solenopsis geminata* (F.), found in a deserted nest of a species of *Nasutitermes*.

The paratype is from State College, Miss., November 22, 1934, Dr. M. R. Smith collector. It was observed attacking the fire ant, *Solenopsis xyloni* McCook.

Type and paratype, United States National Museum No. 53862.

This species runs to *Pseudacteon spatulatum* (Mall.) but differs in the shape and much larger size of the ovipositor.

Note.—The ants were identified by Dr. M. R. Smith, Bureau of Entomology and Plant Quarantine.

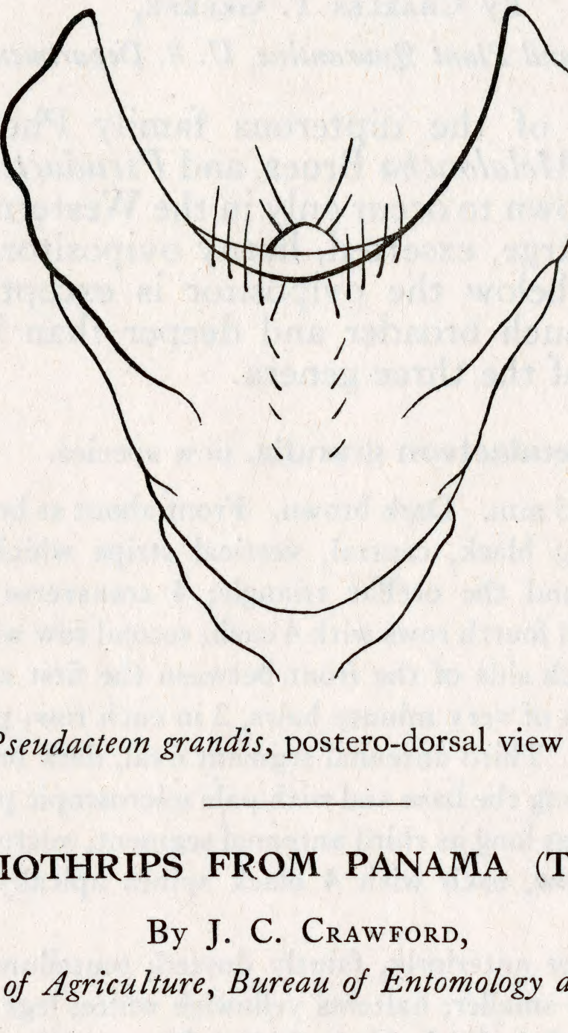


Fig. 1. *Pseudacteon grandis*, postero-dorsal view of ovipositor.

A NEW TAENIOTHRIPS FROM PANAMA (THYSANOPTERA)*

By J. C. Crawford,

U. S. Department of Agriculture, Bureau of Entomology and Plant Quarantine.

Species in the genus *Taeniothrips* which have the fore tarsus apically produced into a clawlike projection are so few in number that a new one, differing widely from those already known, is of interest. It is because of this deviation that the specific name has been selected.

Taeniothrips aberrans, new species.

Holotype female (*macropterous*).—Length (distended) 1.48 mm. Deep brown, thorax with slight orange tinge and much red pigment, especially in prothorax; femora concolorous with body, knees somewhat lighter brown, tibiae paler than

Jamaican Ants Collected by Dr. E. A. Chapin

550, 593, 584, 515, 546, 512, 529
1 - Ponera opaciceps Mayr
594 (an interesting ergataner with the workers)

2- Odontomachus haematoda insularis var. ruginodis Wheeler
541 and 514 (not typical), 605

3 - Odontomachus haematoda insularis Guerin var.
546

4- Anochetus mayri subsp. leviusculus Wheeler
516, 527
* (see 8) * (see 14)
5 - Pseudomyrma elongata Mayr
527, 591

6 - Pseudomyrma brunnea F. Sm.
512, 529,

7 - Pseudomyrma flavidula var. delicatula Forel
512

~~24a~~ * 8 - Platythyrea punctata var. pruinosa Mayr
512

24a 9 - Tetramorium lucayanum Wheeler ✓
501 (new to Jamaican lists)

10 - Pheidole subarmata Mayr
501

11 - Pheidole fallax var. ovalis Forel
501, 510

12 - Pheidole caribbea subsp. sloanei Wheeler
525

35 13 - Pheidole flavens var. vincentensis Forel ✓
580

*

* 14 - Euponera (Trachymesopus) stigma (F.)
548, 584, 585

15 - Monomorium floricola (Jerd.)
589

16 - Monomorium carbonarium subsp. ebeninum Forel
521, 581, 569, 587

17 - Cyphomyrmex rimosus Spinola
514, 541 (note - minutus of Mayr is supposed to be a synonym)

18 - Cryptocerus (Cyathocephalus) varians F. Sm.
605

19 - Wasmannia auropunctata (Roger)
550, 593, 584, 515, 546, 512, 529

20 - Solenopsis geminata (F.)
578✓, 587✓, 516✓, 576✓, 524✓, 512✓, 577✓, 594, 592, 529✓, 583✓, 501✓

35a * 21 - Pheidole sp. (flavens group) ✓
538 (possibly new)

22 - Crematogaster brevispinosa subsp. vicina Andre
502,

23 - Crematogaster steinheili Forel
600, 521, 501

24 - Tapinoma melanocephalum (F.)
585, 607

25 - Iridomyrmex iniquus Mayr
560, 561

26 - Iridomyrmex iniquus var. nigella Emery
553

27 - Dorymyrmex pyramicus (Roger)
587, 528, 592, 501

28 - Paratrechina longicornis (Latr.)
588, 579, 504, 591, 587, 501

29 - Paratrechina (Nylanderia) sp. Z
512

30 - Camponotus conspicuus Forel
516, 527

31 - Camponotus hannani subsp. willardi Forel
538, 607

32 - Camponotus capperi subsp. subdepilis Wheeler
569, 513, 512, 516, 538

56a 33 - Camponotus (Pseudocolobopsis) sp. ✓
586 Bluefields Bay.

34 - Brachymyrmex heeri var. obscurior Forel
512, 585